United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with the Illinois Agricultural Experiment Station

Soil Survey of Grundy County, Illinois

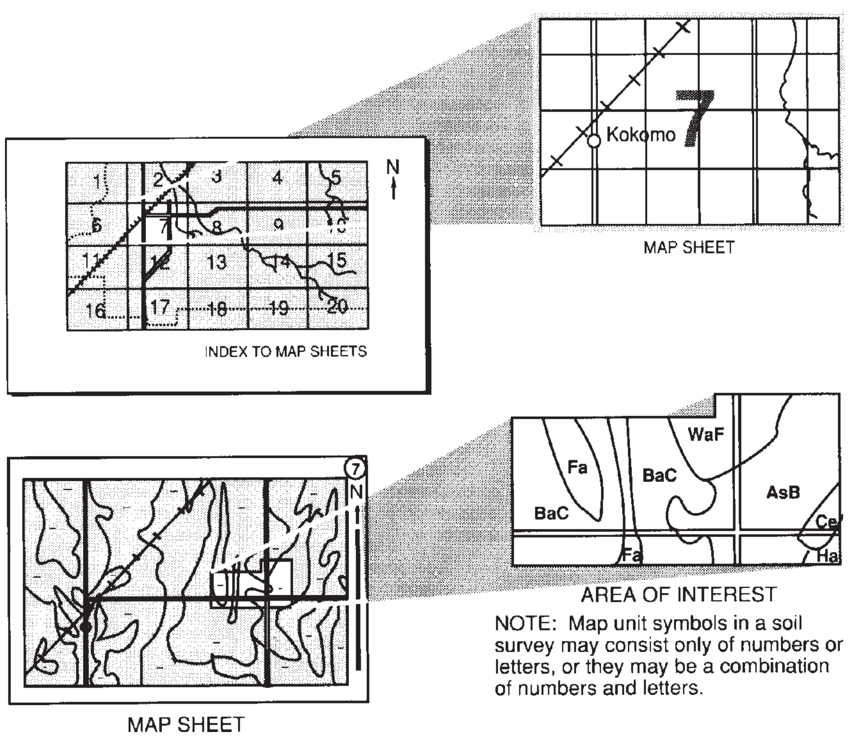
How To Use This Soil Survey

This publication consists of a manuscript and a set of soil maps. The information provided can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the Natural Resources Conservation Service and the Illinois Agricultural Experiment Station. It is part of the technical assistance furnished to the Grundy County Soil and Water Conservation District. Financial assistance was provided by the Grundy County Board and the Illinois Department of Agriculture.

Major fieldwork for this soil survey was completed in 2005. Soil names and descriptions were approved in 2005. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2005. The most current official data are available on the Internet.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Nondiscrimination Statement

Cover Photo Caption

Gebhard Woods State Park, a 30-acre site in Morris, is bordered on the south by the Illinois and Michigan Canal and on the north by Nettle Creek. The park offers many recreational opportunities.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

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Issued 2008

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Foreword

Soil surveys contain information that affects land use planning in survey areas. They include predictions of soil behavior for selected land uses. The surveys highlight soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

Soil surveys are designed for many different users. Farmers, foresters, and agronomists can use the surveys to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the surveys to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the surveys to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each map unit is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

William J. Gradle
State Conservationist
Natural Resources Conservation Service

Soil Survey of Grundy County, Illinois

By Dale E. Calsyn, Natural Resources Conservation Service

Assisted by L. Grant Holliman, Natural Resources Conservation Service

Original fieldwork by L.M. Reinebach, J.L. Alexander, B.E. Currie, C.E. Nelson, J.E. Paschke, D.L. Smith, and M.B. Walker, Soil Conservation Service

Update fieldwork by Kristine A. Ashpole, Mark W. Bramstedt, Dale E. Calsyn, Jeffrey A. Deniger, L. Grant Holliman, Alison M. Steglich, and Roger D. Windhorn, Natural Resources Conservation Service

Map compilation and geographic information assistance by Traci L. Jungles and Dale E. Calsyn, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the Illinois Agricultural Experiment Station

GRUNDY COUNTY is in northeastern Illinois about 50 miles southwest of Chicago (fig. 1). It has an area of 275,355 acres, or 430 square miles. In 2000, the population of the county was 37,535 (U.S. Department of Commerce, 2000). Morris is the county seat and the largest city. The county is bordered by Kendall County on the north, Will and Kankakee Counties on the east, La Salle County on the west, and Livingston and Kankakee Counties on the south.

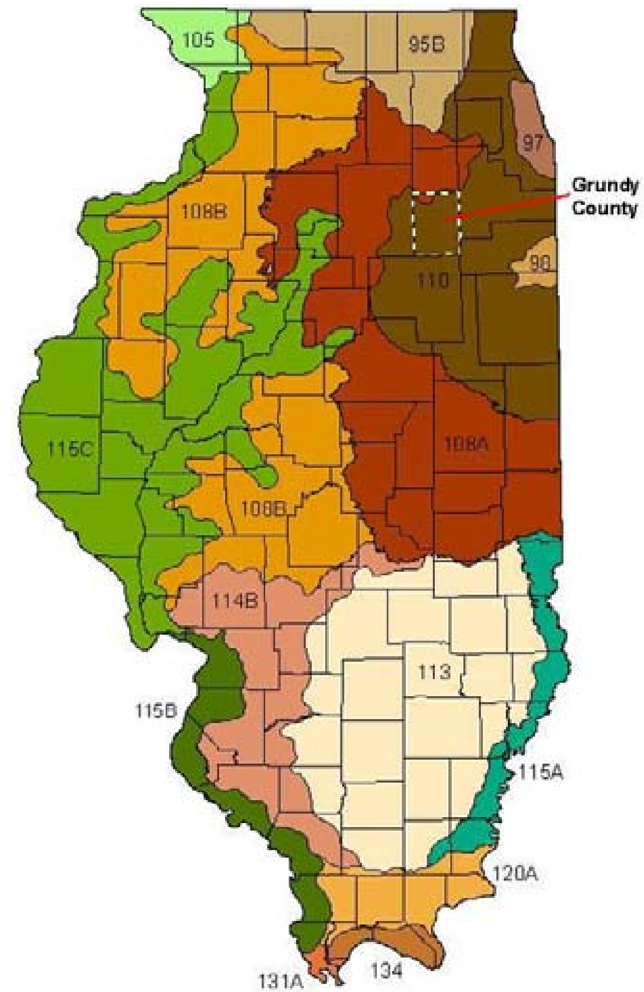
The survey area is a subset of Major Land Resource Areas (MLRAs) 110, Northern Illinois and Indiana Heavy Till Plain, and 108A, Illinois and Iowa Deep Loess and Drift (USDA/NRCS, 2006).

This survey updates the survey of Grundy County published in 1980 (Reinebach, 1980). It provides additional information, updated interpretations, and digital soil maps at a scale of 1:12,000 on an orthophoto base.

The information in this survey is also available as part of an interactive CD with GIS functionality and on the NRCS Web Soil Survey (http://soils.usda.gov).

General Nature of the Survey Area

This section provides general information about Grundy County. It describes history; physiography, relief, and drainage; natural resources; agriculture; urbanization; transportation facilities; industry; and climate.



LEGEND

95B—Southern Wisconsin and Northern Illinois Drift Plain
97—Southwestern Michigan Fruit and Truck Crop Belt
98—Southern Michigan and Northern Indiana Drift Plain
105—Northern Mississippi Valley Loess Hills
108A and 108B—Illinois and Iowa Deep Loess and Drift
110—Northern Illinois and Indiana Heavy Till Plain
113—Central Claypan Areas
114B—Southern Illinois and Indiana Thin Loess and Till Plain, Western Part
115A, 115B, and 115C—Central Mississippi Valley Wooded Slopes
120A—Kentucky and Indiana Sandstone and Shale Hills and Valleys, Southern Part
131A—Southern Mississippi River Alluvium
134—Southern Mississippi Valley Loess

Figure 1.—Location of Grundy County and the major land resource areas (MLRAs) in Illinois.

History

Information for this section was taken from the Grundy County 2020 Comprehensive Land Use Plan.

When the first European settlers came to the area in 1831, they found it to be inhabited by members of the Potawatomi tribe, who were led by their chiefs, Shabbona

and Wauponsee. Shabbona fought with the British against the Americans in the War of 1812 but changed his allegiance soon afterwards. He became a legendary friend of early settlers after he warned them of danger relating to the uprising of Black Hawk, who was hostile to settlers.

The first public land sale was made in 1835, and in 1841 the county was organized out of a part of La Salle County. The county was named after Felix Grundy, the eminent Senator from Tennessee and U.S. Attorney General.

The Illinois and Michigan Canal, built between 1836 and 1848, had a huge impact on Grundy County and the Midwest in general. It stretched from Chicago to La Salle-Peru Illinois, around 100 miles. The canal provided a link between the eastern and midwestern parts of the country. It linked the waters of Lake Michigan with those of the Illinois and Mississippi Rivers. Many communities sprang up along the canal's route. The main communities along the canal in Grundy County were Morris and Minooka. The canal provided a way for farmers to transport their crops. The Illinois and Michigan Canal National Heritage Corridor now is used for recreational purposes.

Physiography, Relief, and Drainage

Grundy County is characterized by ground moraines, end moraines, outwash plains, lake plains, stream terraces, and flood plains. The county lies within the Kankakee Plain, which is in the Till Plains section of the Central Lowland Province (Leighton and others, 1948). The highest point in the county is in the extreme northwest, where the elevation is about 700 feet above sea level. The lowest point, about 510 feet, is along the Illinois River on the western county line (fig. 2).

Few moraines run through the county. In the northeastern part of the county is the Minooka Moraine, and in the far western part is the back side of the Marseilles Moraines System (Hansel and Johnson, 1996). The majority of the county is an intermorainal area.

Nearly the entire area of Grundy County drains into the Illinois River, which crosses the northern half of the county. The Illinois River enters near the northeastern part of Grundy County at the junction of the Des Plaines River from the northeast and the Kankakee River from the southeast. The main tributary, which drains the southern part of the county, is the Mazon River. Three other creeks drain directly into the Illinois River. Nettle and Aux Sable Creeks drain the northern part of the county, and Waupecan Creek drains the southwestern part.

Natural Resources

Grundy County has several different kinds of natural resources, including construction materials, surface water and ground water deposits, and shipping lanes.

The county has several gravel pits. Sand for building purposes and for molds is mostly screened from gravel in the same pits. Little use is made of clay materials at present.

Coal deposits that occurred at depths ranging from 30 to more than 160 feet and averaging about 3.5 feet in thickness have been depleted. However, coal was very important in the development of many communities in the county.

Surface water and ground water are both relatively abundant. The Illinois and Mazon Rivers are continuously flowing streams. The Illinois River provides barge traffic and recreational activities (fig. 3).

Grundy County is perhaps best known for its Mazon River fossils, which are among the richest collections of Carboniferous articulates known to exist (Illinois State Museum, 1995).

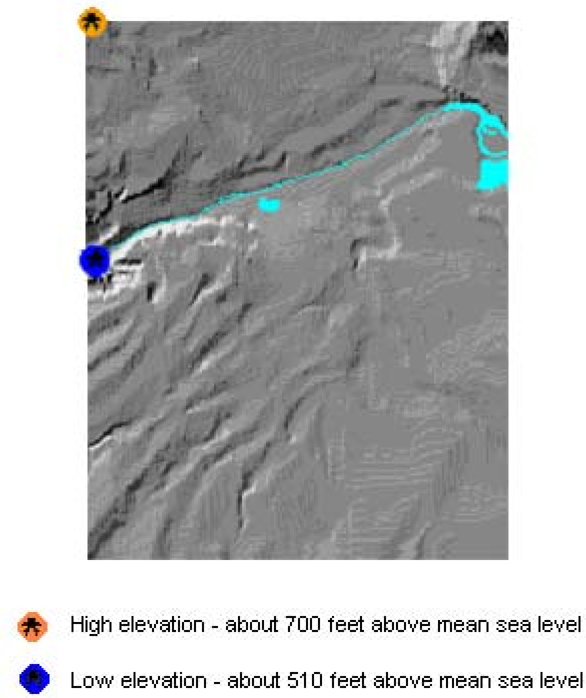


Figure 2.—Generalized relief map showing the location of the highest and lowest elevations in Grundy County. (Source: Illinois State Geological Survey, http://www.isgs.uiuc.edu/education/hi-low/hilow-intro.shtml)

Agriculture

Like much of Illinois, Grundy County has some very fertile farmland. Agriculture has been the dominant land use for decades. In 2002, 77 percent of the county was used for agriculture (U.S. Department of Commerce, 2002). In recent years, the market value of Grundy County agricultural products has consistently exceeded $52 million per year, and over 38 percent of the county's farms have generated annual sales of $100,000 or more.

Corn, soybeans, small grain crops, nursery crops, and greenhouse crops accounted for 94 percent of the market value of agricultural products sold in 2002, and livestock, poultry, and related products accounted for the remaining 6 percent.

Although the market value of farm products is increasing, the number of farms and the number of acres farmed have been declining. In 1992, there were 533 farms making up 225,506 acres. In 2002, there were 407 farms on 213,467 acres. This represents a decline of about 24 percent in the number of farms in the 10-year span; however, the average farm size has increased by about the same percentage.

Urbanization

Many of the early settlers were drawn to Grundy County because of the agricultural potential of the rich soils. The population increased rapidly and consistently from 1840 to 1930. The population decreased slightly in 1930 but has steadily increased since then. Over the last 20 years, the migration of people from urban to suburban areas has begun to impact land use in Grundy County. The population of the county in 2000 (37,535) reflected an increase of 16 percent since the 1990 census (U.S. Department of Commerce, 2000). For the period from 2004 to 2005, Grundy County was the

second fastest growing county in the State, with an estimated population of 43,838 residents.

Transportation Facilities

Grundy County has a well developed, multi-modal transportation system that provides passenger and freight access to the Chicago, St. Louis, and Quad Cities metropolitan areas. The county is served by Interstate Highways 55 and 80; Illinois State Highways 47, 53, and 113; and U.S. Highway 6. Grundy County also has a well integrated county highway system that provides connections between incorporated and unincorporated areas.

Grundy County also has water transportation. The Illinois River provides barge transportation for agricultural and many other products and is used for recreational purposes.

Freight is also shipped by rail. Grundy County is serviced by several mainline railroads that allow direct connection with every major railroad throughout the Midwest, including linkage to Chicago, the largest rail center in the United States.

Several major general aviation airports serve Grundy County. These airports serve local recreational and business flying needs; however, they do not support commercial flights or large jets.

Industry

Information for this section was taken from the Grundy County 2020 Comprehensive Land Use Plan.

Grundy County has a strong traditional economic base that includes manufacturing, health care, retail sales, construction, education, and administrative jobs. Manufacturing in the county includes paper-based packaging, custom molded and fabricated rubber products, and fasteners and tools. Jobs related to frozen food

Figure 3.—The Illinois River provides commercial and recreational opportunities in the county.

warehouses, chemical plants, energy pipelines, and utilities also are available. Housing construction is very important in nearly all parts of the county. Sand, gravel, and limestone are mined for concrete work and other purposes.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Gebhard Woods State Park in the period 1971 to 1996. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 24.3 degrees F and the average daily minimum temperature is 15.7 degrees F. The lowest temperature on record, which occurred at Gebhard Woods State Park on January 20, 1985, is -24 degrees F. In summer, the average temperature is 72.3 degrees and the average daily maximum temperature is 83.9 degrees. The highest temperature, which occurred on June 26, 1988, is 103 degrees F.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual total precipitation is 35.34 inches. Of this total, 17.74 inches, or about 50 percent, usually falls in May through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 7.46 inches on June 26, 1978. Thunderstorms occur on about 48 days each year, and most occur from March through September.

The average seasonal snowfall is 23.4 inches. The greatest snow depth at any one time was 41 inches on January 31, 1979. On an average, about 45 days per year have at least 1 inch of snow on the ground.

The average relative humidity in midafternoon is about 72 percent. Humidity is higher at night, and the average at dawn is about 83 percent. The sun shines 60 percent of the time possible in summer and 53 percent in winter. The prevailing wind is from the south. Average windspeed is highest, about 12 miles per hour, in March.

How This Survey Was Made

Soil surveys are updated as part of maintenance projects that are conducted for a major land resource area (MLRA) or other region. Maintaining and coordinating soil survey information within a broad area result in uniformly delineated and joined soil maps and in coordinated interpretations and map unit descriptions for areas that have similar physiography, climate, and land use.

Updated soil survey information is coordinated within the major land resource area or other region and meets the standards established and defined in the memorandum of understanding. Soil surveys that are consistent and uniform within a broad area enable the coordination of soil management recommendations and a uniform program application of soil information.

This survey was made to provide information about the soils and miscellaneous areas in Grundy County, which is a subset of Major Land Resource Areas 110 and 108A (fig. 1). Major land resource areas are geographically associated land resource units that share a common land use, elevation, topography, climate, water, soils, and vegetation (USDA/NRCS, 2006). Map unit design and the detailed soil descriptions are based on the occurrence of each soil throughout an MLRA.

The information in this survey includes a description of the soils and miscellaneous areas and their location and a discussion of their properties and the subsequent effects on suitability, limitations, and management for specified uses.

During both the previous survey and the update survey, soil scientists observed the steepness, length, and shape of the slopes; the degree of erosion; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They made borings and dug holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries. After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit.

Fieldwork for the Grundy County soil survey update consisted primarily of soil transects conducted by soil scientists. Soil transects are a systematic method of sampling a specific soil type. Soil borings are taken at regular intervals. Soil scientists then record the characteristics of the soil profiles that they study. They note soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. This information can be used to run statistical analyses for specific soil properties. The results of these analyses, along with other observations, enable the soil scientists to assign the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are

modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

Aerial photographs used in this update survey were taken in 1998. Soil scientists also studied U.S. Geological Survey topographic maps and orthophotographs to relate land and image features. Adjustments of soil boundary lines on the original field maps were made to coincide with the U.S. Geological Survey topographic map contour lines and tonal patterns on aerial photographs.

The descriptions, names, and delineations of the soils in this survey area may not fully agree with those of the soils in adjacent survey areas. Differences are the result of an improved knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

Formation and Classification of the Soils

This section relates the soils in the survey area to the major factors of soil formation and describes the system of soil classification.

Formation of the Soils

Soil forms through processes that act on deposited geologic material. The five major factors of soil formation are the physical and mineralogical composition of the parent material; the climate in which the soil formed; the plant and animal life on and in the soil; the relief; and the length of time the processes of soil formation have acted on the parent material (Jenny, 1941).

Climate and plant and animal life are the dominant active factors of soil formation. They act directly on the parent material, either in place or after it has been moved from place to place by water, wind, or glaciers, slowly changing it into a natural body that has genetically related horizons. Relief modifies soil formation and can inhibit soil formation on the steeper, eroded slopes and in wet, depressional or nearly level areas by controlling the moisture status of soils. Finally, time is needed for changing the parent material into a soil that has differentiated horizons.

The factors of soil formation are so closely interrelated and conditioned by each other that few generalizations can be made regarding the effects of any one factor unless the effects of the other factors are understood.

Parent Material

Parent material is the unconsolidated organic and mineral material in which soils form. The soils of Grundy County were derived from parent materials that were directly or indirectly impacted by the Illinoian and Wisconsinan glaciations. The parent materials in Grundy County include till; lacustrine deposits; outwash; loess, or silty material; alluvium; residuum; and organic deposits.

Parent materials were distributed by the action of ice, water, and wind. During the glacial epoch, several glaciers advanced across the region that includes the survey area. These glaciers not only removed old soils but also deposited large amounts of freshly ground-up rock materials, in which the present-day soils formed.

The glacial flooding event that most affected Grundy County was the Kankakee Torrent. The Kankakee Torrent was a gigantic glacial flood, which resulted from the rapid melting of three glaciers that were concentrated in southern Michigan. The meltwaters cut across northwestern Indiana and through Will and Kankakee Counties. At its highest stage, this flood of glacial meltwater overflowed the Kankakee Valley and created very large glacial lakes (Lake Wauponsee, Lake Watseka, Lake Ottawa, and Lake Pontiac) that covered most of Iroquois County to the south, most of Grundy County, the southern part of Kendall County, and the western part of Will County. Lake Wauponsee covered about 75 percent of Grundy County. Many of the fine grained lacustrine sediments in Grundy County were deposited in Glacial Lake Wauponsee (Frankie, 1998).

Till makes up a large proportion of the glacial deposits covering Grundy County. Till consists of unsorted ice-deposited sediment composed of a matrix of silt, clay, and

sand, in which pebbles, cobbles, and boulders are embedded. The till in Grundy County is the Yorkville Member of the Lemont Formation (Hansel and Johnson, 1996). In its unaltered state, this till is dark gray; when oxidized, it is olive brown. It is a fine textured till ranging from silty clay loam to silty clay. Elliott and Beecher soils formed in till of silty clay loam, and Swygert and Bryce soils formed in till of silty clay.

When the glaciers retreated, nearly all of Grundy County was covered by lakes. The glacial meltwater filled the Illinois River and the lowlands along the river to a depth of 650 feet (Willman and Payne, 1942). In areas of quiet water, sand, silt, and clay were deposited once the water receded. These deposits are known as the Equality Formation. At elevations below 620 feet, there are thick lacustrine deposits of the Equality Formation, commonly layers of silt and clay. Martinton and Milford soils occur in these areas. Where this formation occurs at the higher elevations, it is only a few feet thick and is more coarsely textured. Cresent, Darroch, and Selma soils occur in the areas of loamy and sandy deposits.

Associated with the moraines and meltwater channels are areas of sandy and gravelly outwash, known as the Henry Formation. Warsaw, Hononegah, and related soils formed in these coarse deposits. Outwash was deposited by water flowing at different rates down streams, across outwash plains, or into lakes. The variation in water flow resulted in strata of different textures and thickness. Outwash materials thus range from coarse, nearly clean gravel to very fine, nearly pure clay. Typically, however, these materials are mixtures of two or more particle sizes.

Windblown material mantles most areas in Grundy County. The silty, windblown deposits, known as loess, are part of the Peoria Silt Formation. The loess is about 3 to 4 feet thick along the western border of the county and becomes thinner and sandier to the east. The upper part of the profile of Drummer and Brenton soils formed in loess. The eolian sand deposits are part of the Henry Formation. The sand dune deposits commonly occur in the east-central part of the county. Ade and Watseka soils formed in eolian deposits. Sandy outwash generally underlies the windblown sand. The thickness and texture of the windblown deposits contribute largely to the quality and variability of the soils in the county.

Alluvium consists of material and sediments deposited by streams and rivers on flood plains. The alluvium in Grundy County is part of the Cahokia Formation. The texture of alluvium varies, depending on the velocity of the water source and the texture of the sediment in the water. Sawmill soils formed in fine grained alluvium, and Ross soils formed in medium grained alluvium.

A small percentage of the soils formed in residuum, which is material weathered from bedrock. Faxon and Rockton soils are moderately deep to dolomite. High Gap and Shadeland soils are moderately deep to shale that is commonly interbedded with sandstone.

Organic deposits consist primarily of decomposed plant remnants. After the glaciers receded, water was left standing in depressional areas. As a result, these areas were very wet during soil formation, and the decaying plant material accumulated more quickly than it decomposed. Most of these plant remains are decomposed to a point that they are unrecognizable. These organic deposits are called sapric material. The sapric material is underlain by coprogenous earth, which is fecal material deposited in water by aquatic organisms. Muskego soils formed in sapric material overlying coprogenous earth.

Climate

Grundy County has a temperate and humid continental climate. The general climate has had an important overall influence on the characteristics of the soils. However, the climate is essentially uniform throughout the county and has not caused any major

differences among the soils. In Grundy County it has generally favored the growth of prairie grasses and hardwood forests.

Climate is important in soil development because it largely determines the type of weathering that takes place. Most years this region has enough rainfall and melted snowfall to moisten all of the soil and underlying material to bedrock or to the permanent water table. The degree of saturation is variable, depending on thickness and permeability of unconsolidated materials, their water-holding capacity, and topography.

In general, rainfall percolates downward to underground outlets, evaporates, is transpired by plants, or moves across the land surface to streams, carrying with it material in solution and suspension. Salts of calcium, magnesium, potassium, and other bases, as well as various organic and inorganic colloids, are formed. Some accumulate where formed, some are carried away in drainage waters, some are moved to other parts of the soil section to help form soil horizons, and some, in the form of nutrient ions, are taken up by plants. The latter tend to be returned to the local soil area unless removed by animals or humans.

Spring rains and wind can cause extensive erosion in areas where crop residue, trees, and other vegetative cover have been removed from the surface. More soil will be lost through erosion each year than is formed by natural processes.

Freezing and thawing help to break down rock fragments to smaller and smaller particles, and the action of sun and wind influences many phases of plant and animal life.

Living Organisms

Soils are affected by the vegetation under which they formed. The main contribution of the vegetation and biological processes is the addition of organic material and nitrogen to the soil. The amount of organic matter in the soil depends on the kind of native plants that grew on the soil. Two kinds, tall-grass prairie and deciduous forest, were present when Grundy County was settled and presumably had been there for a long time. Grasses have many fine, fibrous roots that add large amounts of organic material to the soil when they die and decay. Soils that formed under prairie vegetation, therefore, have a thick, black or dark brown surface layer. In contrast, soils that supported native vegetation of deciduous trees have a thinner, lighter colored surface layer. Forest debris accumulated primarily on the soil surface, where most of it decayed rapidly or was burned or eroded away. A relatively small amount was carried by soil organisms into the upper 1 to 5 inches of mineral soil, where it was partially preserved. In the virgin or uncultivated state, soils that developed under both types of vegetation have a dark surface layer resulting from an accumulation of organic matter. However, the dark layer is much thicker in prairie soils, typically ranging between 10 and 18 inches. Examples of soils that formed under prairie conditions are Brenton and Elliott soils. In soils that formed under forest vegetation, the surface layer is generally 3 to 6 inches thick. Examples of soils that formed under forest vegetation are Ozaukee and Starks soils. Where the two types of vegetation were combined or where forest was encroaching on prairie, the surface layer is 7 to 10 inches thick. Examples of soils that formed in these transitional areas are Beecher soils. Mucky soils commonly have an accumulation of herbaceous organic material several feet deep. Muskego soils are examples.

Bacteria, fungi, and other micro-organisms help to break down the organic material and thus provide nutrients for plants and other soil organisms. The stability of soil aggregates, which are structure units made up of sand, silt, and clay, is affected by microbial activity because cellular excretions from these organisms help to bind soil particles together. Stable aggregates help to maintain soil porosity and promote favorable relationships among soil, water, and air. Moreover, earthworms, crayfish,

insects, and burrowing animals tend to incorporate organic material into the soil and to keep soils open and porous.

Human activities also are important factors in soil formation and development in Grundy County. Settlers first cleared the native vegetation and plowed the land. By cultivating slopes, the farmers left the soils vulnerable to erosion and deposition. Later, when plant nutrients were depleted in the soil, fertilizer and lime were applied. Urban and industrial expansion results in land being drained, cleared, excavated, and filled. These practices have had a pronounced effect on past soil formation and will continue to impact present and future soil development.

Topography

Relief, which includes elevation, topography, and water table levels, largely determines the natural drainage of soils. In Grundy County, the slopes range from 0 to 60 percent. Natural soil drainage ranges from excessively drained on the backslopes and summits to very poorly drained in depressions.

Relief affects the depth to the seasonal high water table or natural drainage of the soil by influencing infiltration and runoff rates. The poorly drained Drummer and Ashkum soils occur in low-lying, nearly level areas and have a water table close to the surface for most of the year. The soil pores contain water, which restricts the circulation of air in the soil. Under these conditions, iron and manganese compounds are chemically reduced. As a result, the subsoil is dull gray and mottled. In the more sloping, well drained Martinsville and Proctor soils, the water table is lower, and some of the rainfall runs off the surface. The iron and manganese compounds are well oxidized. As a result, the subsoil is brown. Between these extremes, or where the water table fluctuates slowly into and out of the soil profile, these compounds are moderately well to imperfectly oxidized, resulting in mixed or mottled colors.

Local relief also influences the severity of erosion. Even though some erosion occurs on all sloping soils, the hazard of erosion generally becomes more severe as the slope increases. The runoff and the removal of soil material on these slopes result in the formation of soils that have a thinner solum.

Time

The length of time needed for the formation of a soil depends on the other factors of soil formation. Soils form more rapidly and are more acid if the parent material has a low content of lime. Thus, more rapidly permeable soils form more readily than more slowly permeable soils because lime and other soluble minerals are leached more quickly. Also, unconsolidated materials weather faster than solid bedrock; therefore, a soil profile that formed in the former materials will reach a certain stage of development sooner than one that formed in bedrock. Forest soils form more quickly than prairie soils because grasses are more efficient in recycling calcium and other bases from the subsoil to the surface layer. Soils in humid climates that support good growth of vegetation form more rapidly than those in dry climates.

The length of time that the parent materials have been in place determines, to a great extent, the degree of profile development. Most of the soils in Grundy County began formation with the retreat of the last glacier about 12,500 years ago. On flood plains, however, material is deposited during each flood. This continual deposition slows development. Sawmill soils are examples of this process.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999). Beginning with the broadest, these categories

are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 4 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol.* An example is Mollisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquoll (*Aqu,* meaning water, plus *oll,* from Mollisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Endoaquolls (*Endo,* meaning within, plus *aquoll,* the suborder of the Mollisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Endoaquolls.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle size, mineral content, cation-exchange activity class, soil temperature regime, soil depth, and reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-silty, mixed, superactive, mesic Typic Endoaquolls.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. An example is the Drummer series.

Soil Series and Detailed Soil Map Units

In this section, arranged in alphabetical order, each major soil series recognized in the survey area is described. Each series description is followed by detailed descriptions of the associated soil map units.

Characteristics of the soil and the material in which it formed are identified for each soil series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff, 1999) and in "Keys to Soil Taxonomy" (Soil Survey Staff, 2003). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the headings "Use and Management of the Soils" and "Soil Properties."

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of

such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. The soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Ozaukee silt loam, 2 to 4 percent slopes, is a phase of the Ozaukee series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Bryce, shale substratum-Calamine silty clays, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Muskego and Peotone soils, ponded, 0 to 2 percent slopes, is an undifferentiated group in this survey area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Pits, gravel, is an example.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Ade Series

Drainage class: Somewhat excessively drained
Landform: Outwash plains and stream terraces
Parent material: Eolian deposits and/or outwash
Slope range: 1 to 6 percent
Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Lamellic Argiudolls

Typical Pedon

Ade loamy fine sand, 1 to 6 percent slopes; at an elevation of 568 feet; 1,254 feet north and 87 feet east of the southwest corner of sec. 10, T. 32 N., R. 8 E.; Grundy County, Illinois; USGS Coal City topographic quadrangle; lat. 41 degrees 15 minutes 43 seconds N. and long. 88 degrees 18 minutes 13 seconds W., NAD 27; UTM Zone 16, Easting 0390797, Northing 4568653, NAD 83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) loamy fine sand, grayish brown (10YR 5/2) dry; weak medium granular structure; very friable; many fine roots; slightly acid; gradual smooth boundary.

A—8 to 16 inches; very dark grayish brown (10YR 3/2) loamy fine sand, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure; very friable; many fine roots; moderately acid; clear smooth boundary.

AB—16 to 22 inches; dark brown (10YR 3/3) loamy fine sand, brown (10YR 5/3) dry; weak medium subangular blocky structure; very friable; common fine roots; moderately acid; clear smooth boundary.

Bw—22 to 29 inches; yellowish brown (10YR 5/4) fine sand; single grain; loose; few fine roots; moderately acid; gradual smooth boundary.

E and Bt—29 to 60 inches; yellowish brown (10YR 5/4) and brown (10YR 5/3) fine sand (E); single grain; loose; lamellae of brown (7.5YR 4/4) fine sandy loam 1/2 inch to 8 inches thick (Bt); weak medium subangular blocky structure; friable; many fine distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; slightly acid; gradual wavy boundary.

C1—60 to 73 inches; pale brown (10YR 6/3) fine sand; single grain; loose; neutral; clear wavy boundary.

C2—73 to 80 inches; pale brown (10YR 6/3) and brownish yellow (10YR 6/6) fine sand; single grain; loose; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 23 inches
Depth to lamellae: 30 to 45 inches
Depth to the base of soil development: 54 to 77 inches

Ap, A, or AB horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—loamy fine sand

Bw horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture—loamy fine sand or fine sand

E and Bt horizon:
Hue—10YR in the E part; 10YR or 7.5YR in the Bt part
Value—4 to 6 in the E part; 3 or 4 in the Bt part
Chroma—3 to 6 in the E part; 3 or 4 in the Bt part
Texture—sand or fine sand in the E part; loamy sand, loamy fine sand, sandy loam, or fine sandy loam in the Bt part

C horizon:
Hue—10YR
Value—5 or 6
Chroma—3 to 6
Texture—fine sand

98B—Ade loamy fine sand, 1 to 6 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Backslopes and summits

Map Unit Composition

Ade and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have gravel in the lower part of the profile
- Soils that have slopes of less than 1 percent or more than 6 percent
- Soils that do not have a subsurface layer

Dissimilar soils:
- The somewhat poorly drained Watseka soils on footslopes and summits
- The poorly drained Gilford soils on toeslopes

Properties and Qualities of the Ade Soil

Parent material: Eolian deposits and/or outwash
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Rapid
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: 3s
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Andres Series

Drainage class: Somewhat poorly drained
Landform: Ground moraines and lake plains
Parent material: Thin mantle of loess or other silty material and the underlying outwash and till
Slope range: 0 to 2 percent
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Andres silt loam, 0 to 2 percent slopes; at an elevation of 633 feet; 1,525 feet south and 510 feet east of the northwest corner of sec. 27, T. 30 N., R. 8 E.; Livingston County, Illinois; USGS Campus topographic quadrangle; lat. 41 degrees 02 minutes 52 seconds N. and long. 88 degrees 18 minutes 17 seconds W., NAD 27; UTM Zone 16, Easting 0390341, Northing 4544894, NAD 83:

Ap—0 to 11 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.

BA—11 to 14 inches; brown (10YR 4/3) clay loam; moderate medium subangular blocky structure; friable; few very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt1—14 to 19 inches; brown (10YR 4/3) clay loam; moderate fine subangular blocky structure; friable; few very fine roots; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine prominent strong brown (7.5YR 5/6) weakly cemented iron and manganese oxide concretions throughout; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt2—19 to 26 inches; grayish brown (10YR 5/2) clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; common fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

Bt3—26 to 36 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; common faint dark gray (10YR 4/1) clay films on faces of peds; few fine black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

2Bt4—36 to 50 inches; light olive brown (2.5Y 5/4) silty clay loam; weak medium prismatic structure; firm; common faint grayish brown (2.5Y 5/2) clay films on faces of peds; few very fine roots; few fine black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; many medium prominent gray (N 5/) iron depletions in the matrix; 3 percent gravel; very slightly effervescent; slightly alkaline; clear smooth boundary.

2C—50 to 60 inches; light olive brown (2.5Y 5/4) silty clay loam; massive; firm; few fine black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; many medium prominent gray (N 5/) iron depletions in the matrix; 5 percent gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess or other silty material: Less than 24 inches
Depth to till: 22 to 50 inches
Depth to carbonates: 24 to 55 inches
Depth to the base of soil development: 36 to 60 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or loam

Bt horizon:
Hue—10YR or 2.5Y
Value—3 to 5

Chroma—2 to 4
Texture—clay loam, loam, sandy clay loam, or silty clay loam

2Bt horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—silty clay loam

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—silty clay loam or silt loam

293A—Andres silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and lake plains
Position on the landform: Footslopes and summits

Map Unit Composition

Andres and similar soils: 88 percent
Dissimilar soils: 12 percent

Components of Minor Extent

Similar soils:
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have slopes of more than 2 percent
- Soils that have a thinner surface soil
- Soils that have till beginning at a depth of less than 22 inches or more than 50 inches

Dissimilar soils:
- The poorly drained Ashkum and Reddick soils on toeslopes

Properties and Qualities of the Andres Soil

Parent material: Thin mantle of loess or other silty material and the underlying outwash and till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low

Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Ashkum Series

Drainage class: Poorly drained
Landform: Ground moraines and end moraines
Parent material: Colluvium and the underlying till
Slope range: 0 to 2 percent
Taxonomic classification: Fine, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Ashkum silty clay loam, 0 to 2 percent slopes; at an elevation of 705 feet; 96 feet south and 2,030 feet east of the northwest corner of sec. 22, T. 34 N., R. 11 E.; Will County, Illinois; USGS Manhattan topographic quadrangle; lat. 41 degrees 25 minutes 30 seconds N. and long. 87 degrees 57 minutes 19 seconds W., NAD 27; UTM Zone 16, Easting 0420168, Northing 4586370, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; many very fine roots; neutral; clear smooth boundary.

A—7 to 12 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; friable; common very fine roots; neutral; clear smooth boundary.

BAg—12 to 18 inches; dark gray (2.5Y 4/1) silty clay loam; moderate very fine and fine subangular blocky structure; firm; common very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; common fine very dark gray (7.5YR 3/1) very weakly cemented iron and manganese oxide concretions throughout; neutral; clear smooth boundary.

Bg1—18 to 29 inches; grayish brown (2.5Y 5/2) silty clay; moderate medium prismatic structure parting to moderate medium angular blocky; firm; common very fine roots; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine very dark gray (7.5YR 3/1) very weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint gray (2.5Y 5/1) iron depletions in the matrix; neutral; clear wavy boundary.

2Bg2—29 to 49 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine very dark gray (10YR 3/1) very weakly cemented iron and manganese oxide concretions throughout; common fine and medium prominent yellowish brown (10YR 5/8) and faint brown (10YR 5/3) masses of iron accumulation in the matrix; common fine and medium faint gray (5Y 5/1) iron depletions in the matrix; 8 percent gravel; neutral; gradual wavy boundary.

2BCg—49 to 54 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to weak coarse angular blocky; firm; few very fine roots; common fine very dark gray (10YR 3/1) very weakly cemented iron and manganese oxide concretions throughout; common fine and medium prominent yellowish brown (10YR 5/6) and faint brown (10YR 5/3) masses of iron

accumulation in the matrix; common fine and medium faint gray (2.5Y 5/1) iron depletions in the matrix; 8 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

2Cg—54 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; common fine prominent yellowish brown (10YR 5/6) and common fine and medium faint brown (10YR 5/3) masses of iron accumulation in the matrix; common fine faint gray (2.5Y 5/1) iron depletions in the matrix; 8 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the colluvium: 15 to 40 inches
Depth to carbonates: 24 to 60 inches
Depth to the base of soil development: 30 to 60 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay loam

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam or silty clay

2Bg horizon:
Hue—2.5Y, 5Y, 5GY, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam

2Cg horizon:
Hue—2.5Y, 5Y, 5GY, or N
Value—5 or 6
Chroma—0 to 2
Texture—silty clay loam
Content of gravel—less than 10 percent

232A—Ashkum silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Toeslopes

Map Unit Composition

Ashkum and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that are overlain by light-colored recent deposits
- Soils that have less clay and more sand or silt in the subsoil

- Soils that have less silt and more clay in the subsoil
- Soils that are darker in the upper part of the subsoil

Dissimilar soils:

- The somewhat poorly drained Elliott soils on summits and footslopes
- Very poorly drained organic soils on toeslopes

Properties and Qualities of the Ashkum Soil

Parent material: Colluvium and the underlying till
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 7.0 percent
Shrink-swell potential: High
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Beecher Series

Drainage class: Somewhat poorly drained
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 0 to 4 percent
Taxonomic classification: Fine, illitic, mesic Udollic Epiaqualfs

Typical Pedon

Beecher silt loam, 0 to 2 percent slopes; at an elevation of 655 feet; 340 feet south and 65 feet west of the northeast corner of sec. 14, T. 31 N., R. 12 E.; Kankakee County, Illinois; USGS Bradley topographic quadrangle; lat. 41 degrees 10 minutes 36 seconds N. and long. 87 degrees 47 minutes 56 seconds W., NAD 27; UTM Zone 16, Easting 0432988, Northing 4558680, NAD 83:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; weak very fine granular structure; friable; neutral; abrupt smooth boundary.

BE—9 to 13 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate very fine granular structure; friable; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine faint brown (10YR 5/3) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

2Bt1—13 to 16 inches; brown (10YR 5/3) silty clay loam; moderate very fine subangular blocky structure; firm; few distinct very dark gray (10YR 3/1) organo-

clay films on faces of peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; many fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 1 percent gravel; moderately acid; clear smooth boundary.

2Bt2—16 to 21 inches; grayish brown (10YR 5/2) silty clay loam; moderate very fine and fine subangular blocky structure; firm; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common distinct dark gray (10YR 4/1) clay films on faces of peds; many fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 2 percent gravel; moderately acid; clear smooth boundary.

2Bt3—21 to 27 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; firm; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common distinct dark gray (10YR 4/1) clay films on faces of peds; few fine dark brown (7.5YR 3/3) and black (10YR 2/1) iron and manganese oxide concretions throughout; few fine prominent yellowish brown (10YR 5/6 and 5/8) masses of iron accumulation in the matrix; 2 percent gravel; slightly alkaline; clear smooth boundary.

2Bt4—27 to 32 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/8) and distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many medium prominent gray (5Y 5/1) iron depletions in the matrix; 2 percent gravel; slightly alkaline; clear smooth boundary.

2BCt—32 to 37 inches; yellowish brown (10YR 5/6) silty clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; firm; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; many coarse prominent gray (5Y 5/1) iron depletions in the matrix; 2 percent gravel; slightly effervescent; moderately alkaline; clear smooth boundary.

2Cd—37 to 60 inches; yellowish brown (10YR 5/4) silty clay loam; massive with some horizontal and vertical cleavage; very firm; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/8) and distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine prominent greenish gray (5GY 5/1) iron depletions in the matrix; common medium prominent greenish gray (5G 6/1) iron depletions on cleavage planes; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: Less than 18 inches
Depth to carbonates: 20 to 42 inches
Depth to the base of soil development: 24 to 45 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

E horizon (where present):
Hue—10YR
Value—4 or 5

Chroma—2
Texture—silt loam

2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silty clay
Content of gravel—less than 5 percent

2BCt or 2Cd horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam
Content of gravel—1 to 10 percent

298A—Beecher silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Footslopes and summits

Map Unit Composition

Beecher and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a thicker dark surface layer
- Soils that have slopes of more than 2 percent
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that formed in more than 18 inches of loess or other silty material

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Beecher Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 24 to 45 inches to dense material
Available water capacity: About 7.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 0.5 foot to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Medium

Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

298B—Beecher silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and footslopes

Map Unit Composition

Beecher and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that have a lighter colored surface layer
- Soils that formed in more than 18 inches of loess or other silty material

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Beecher Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 24 to 45 inches to dense material
Available water capacity: About 7.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 0.5 foot to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Blount Series

Drainage class: Somewhat poorly drained
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 0 to 4 percent
Taxonomic classification: Fine, illitic, mesic Aeric Epiaqualfs

Typical Pedon

Blount silt loam, 0 to 2 percent slopes; at an elevation of 705 feet; 2,480 feet south and 1,203 feet west of the northeast corner of sec. 29, T. 26 N., R. 6 E.; Livingston County, Illinois; USGS Fairbury topographic quadrangle; lat. 40 degrees 41 minutes 36 seconds N. and long. 88 degrees 32 minutes 55 seconds W., NAD 27; UTM Zone 16, Easting 0369163, Northing 4505880, NAD 83:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; few fine roots; moderately acid; abrupt smooth boundary.

E—7 to 13 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; moderate thin platy structure; friable; few fine roots; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; strongly acid; abrupt smooth boundary.

2Bt1—13 to 17 inches; brown (10YR 5/3) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; 3 percent gravel; moderately acid; clear smooth boundary.

2Bt2—17 to 26 inches; grayish brown (10YR 5/2) silty clay; weak medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common medium black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; 3 percent gravel; slightly acid; clear smooth boundary.

2Bt3—26 to 32 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium prismatic structure parting to weak medium angular blocky; firm; few very fine roots; common distinct gray (5Y 5/1) clay films on faces of peds; many medium prominent gray (5Y 6/1) iron depletions in the matrix; 3 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2Cd—32 to 60 inches; 60 percent light olive brown (2.5Y 5/4) and 40 percent gray (5Y 6/1) silty clay loam; massive; very firm; common medium prominent white (10YR 8/1) calcium carbonate concretions throughout; 5 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the loess or other silty material: Less than 18 inches
Depth to carbonates: 19 to 40 inches
Depth to the base of soil development: 30 to 48 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 3
Texture—silt loam

E horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—1 or 2
Texture—silt loam

Bt or 2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay loam, silty clay, or clay loam
Content of gravel—2 to 10 percent

2Cd horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay loam or clay loam
Content of gravel—2 to 14 percent

23A—Blount silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Footslopes and summits

Map Unit Composition

Blount and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a darker surface layer
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have slopes of more than 2 percent
- Soils that have less clay and more sand or silt in the subsoil

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Blount Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 30 to 48 inches to dense material
Available water capacity: About 8.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 0.5 foot to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and concrete

Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

23B—Blount silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Footslopes and backslopes

Map Unit Composition

Blount and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have a darker surface layer
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have slopes of less than 2 percent
- Soils that have less clay and more sand or silt in the subsoil
- Soils that are moderately eroded

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Blount Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 30 to 48 inches to dense material
Available water capacity: About 8.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 0.5 foot to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Braidwood Series

Drainage class: Well drained
Landform: Spoil piles on outwash plains
Parent material: Mine spoil
Slope range: 1 to 70 percent
Taxonomic classification: Coarse-loamy, mixed, subactive, calcareous, mesic Typic Udorthents

Typical Pedon

Braidwood loam, 20 to 70 percent slopes; at an elevation of 620 feet; 350 feet north and 575 feet west of the southeast corner of sec. 32, T. 32 N., R. 9 E.; Will County, Illinois; USGS Essex topographic quadrangle; lat. 41 degrees 12 minutes 12 seconds N. and long. 88 degrees 12 minutes 27 seconds W., NAD 27; UTM Zone 16, Easting 0398760, Northing 4562024, NAD 83:

A—0 to 6 inches; 70 percent dark gray (10YR 4/1) and 30 percent very dark grayish brown (10YR 3/2) loam, gray (10YR 6/1) dry; weak fine granular structure; friable; many very fine to coarse roots; few fine prominent brownish yellow (10YR 6/8) weakly cemented iron oxide concretions lining pores; 2 percent gravel and 3 percent coal fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

AC—6 to 15 inches; dark gray (2.5Y 4/1) silt loam, gray (2.5Y 6/1) dry; massive; friable; common very fine to medium roots; common medium prominent brownish yellow (10YR 6/8) weakly cemented iron oxide concretions throughout; 4 percent gravel and 1 percent coal fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

C1—15 to 25 inches; dark grayish brown (2.5Y 4/2) loam; massive; firm; common very fine to medium roots; 4 percent gravel, 1 percent channers, and 1 percent coal fragments; violently effervescent; moderately alkaline; gradual wavy boundary.

C2—25 to 37 inches; dark grayish brown (2.5Y 4/2) loam; massive; firm; common very fine and fine roots; 6 percent gravel, 1 percent channers, and 4 percent coal fragments; violently effervescent; moderately alkaline; clear wavy boundary.

C3—37 to 65 inches; stratified dark gray (10YR 4/1) loam (55 percent) and dark yellowish brown (10YR 4/4) sand (45 percent); massive (loam) and single grain (sand); firm (loam) and loose (sand); few fine and medium roots; common medium prominent brown (7.5YR 4/4) weakly cemented iron oxide concretions throughout; common fine distinct black (10YR 2/1) strongly cemented manganese oxide nodules throughout; 5 percent gravel, 1 percent channers, and 1 percent coal fragments; violently effervescent; moderately alkaline.

Range in Characteristics

A horizon:
Hue—10YR or 2.5Y
Value—3 or 4
Chroma—1 or 2
Texture—loam
Content of rock fragments—less than 10 percent

AC horizon:
Hue—10YR or 2.5Y
Value—3 or 4
Chroma—1 or 2

Texture—loam or silt loam
Content of rock fragments—less than 10 percent

C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—stratified loam, silt loam, sandy loam, loamy sand, or sand
Content of rock fragments—less than 15 percent

688B—Braidwood loam, 1 to 7 percent slopes

Setting

Landform: Spoil piles on outwash plains
Position on the landform: Shoulders and summits

Map Unit Composition

Braidwood and similar soils: 90 percent
Dissimilar components: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 1 percent or more than 7 percent
- Soils that have less sand and more silt in the upper part of the profile
- Soils that have more rock fragments throughout the profile

Dissimilar components:
- The somewhat poorly drained Watseka soils on summits and footslopes
- Areas of water

Properties and Qualities of the Braidwood Soil

Parent material: Mine spoil
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

688D—Braidwood loam, 7 to 20 percent slopes

Setting

Landform: Spoil piles on outwash plains
Position on the landform: Backslopes

Map Unit Composition

Braidwood and similar soils: 90 percent
Dissimilar components: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 7 percent or more than 20 percent
- Soils that have less sand and more silt in the upper part of the profile
- Soils that have more rock fragments throughout the profile

Dissimilar components:
- Nearly level to gently sloping areas of natural soils
- Areas of water

Properties and Qualities of the Braidwood Soil

Parent material: Mine spoil
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

688G—Braidwood loam, 20 to 70 percent slopes

Setting

Landform: Spoil piles on outwash plains
Position on the landform: Backslopes

Map Unit Composition

Braidwood and similar soils: 90 percent
Dissimilar components: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 20 percent or more than 70 percent
- Soils that have less sand and more silt in the upper part of the profile
- Soils that have more rock fragments throughout the profile

Dissimilar components:
- Strongly sloping areas of natural soils
- Areas of water

Properties and Qualities of the Braidwood Soil

Parent material: Mine spoil
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Brenton Series

Drainage class: Somewhat poorly drained
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying outwash
Slope range: 0 to 2 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Brenton silt loam, 0 to 2 percent slopes; at an elevation of 612 feet; 60 feet west and 1,760 feet south of the northeast corner of sec. 29, T. 30 N., R. 4 E.; Livingston County, Illinois; USGS Streator South topographic quadrangle; lat. 41 degrees 02 minutes 33 seconds N. and long. 88 degrees 46 minutes 36 seconds W., NAD 27; UTM Zone 16, Easting 0350669, Northing 4545007, NAD 83:

Ap—0 to 12 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.

Bt1—12 to 18 inches; dark grayish brown (10YR 4/2) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation

in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt2—18 to 24 inches; brown (10YR 5/3) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt3—24 to 28 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

2Bt4—28 to 34 inches; grayish brown (10YR 5/2) clay loam; weak fine prismatic structure parting to weak fine angular blocky; friable; few very fine roots; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine prominent strong brown (7.5YR 5/6) weakly cemented iron and manganese oxide concentrations throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint gray (10YR 5/1) iron depletions; neutral; clear smooth boundary.

2Bt5—34 to 44 inches; grayish brown (10YR 5/2) sandy loam; weak fine prismatic structure; friable; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

2C—44 to 60 inches; grayish brown (10YR 5/2), stratified sandy loam and loamy sand; massive; very friable; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 4 percent gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess or other silty material: 24 to 40 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 40 to more than 60 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 7
Chroma—1 to 8
Texture—clay loam, sandy loam, or silt loam
Content of gravel—less than 5 percent

2C horizon:
Hue—7.5Y, 10YR, 2.5Y, or 5Y
Value—4 to 7
Chroma—1 to 8
Texture—stratified loam, sandy loam, clay loam, or loamy sand
Content of gravel—less than 15 percent

149A—Brenton silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Footslopes and summits

Map Unit Composition

Brenton and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have more gravel in the lower part of the profile
- Soils that have till in the lower part of the profile
- Soils that have outwash beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:
- The well drained Proctor soils on backslopes
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Brenton Soil

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Bryce Series

Drainage class: Poorly drained
Landform: Glacial lakes (relict), ground moraines, stream terraces, and lake plains
Parent material: Colluvium and the underlying till or colluvium and the underlying lacustrine deposits over shale bedrock
Slope range: 0 to 2 percent
Taxonomic classification: Fine, mixed, superactive, mesic Vertic Endoaquolls

Typical Pedon

Bryce silty clay, 0 to 2 percent slopes; at an elevation of 675 feet; 2,559 feet north and 45 feet west of the center of sec. 7, T. 25 N., R. 13 W.; Iroquois County, Illinois; USGS Woodworth topographic quadrangle; lat. 40 degrees 38 minutes 39 seconds N. and long. 87 degrees 52 minutes 23 seconds W., NAD 27; UTM Zone 16, Easting 0426178, Northing 4499628, NAD 83:

Ap1—0 to 10 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; weak very fine granular structure; friable; few fine black (7.5YR 2.5/1) weakly cemented nodules of iron and manganese oxide throughout; slightly acid; abrupt smooth boundary.

Ap2—10 to 13 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; moderate medium angular blocky structure; friable; moderately acid; abrupt smooth boundary.

Bg—13 to 19 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; friable; many distinct black (10YR 2/1) organic coatings on faces of peds; common fine distinct dark grayish brown (2.5Y 4/2) and few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear wavy boundary.

Btg1—19 to 24 inches; dark grayish brown (2.5Y 4/2) silty clay; weak medium prismatic structure parting to moderate fine and medium subangular blocky; firm; many distinct dark gray (10YR 4/1) clay films on faces of peds; many distinct black (N 2.5/) organo-clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear wavy boundary.

Btg2—24 to 35 inches; olive gray (5Y 5/2) silty clay; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few slickensides on faces of peds; common distinct olive gray (5Y 4/2) clay films on faces of peds; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine black (7.5YR 2.5/1) weakly cemented iron and manganese oxide nodules throughout; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine faint dark gray (2.5Y 4/1) iron depletions in the matrix; neutral; gradual smooth boundary.

Btg3—35 to 45 inches; gray (5Y 5/1) silty clay; weak coarse prismatic structure parting to weak coarse subangular blocky; firm; few fine roots; common distinct dark gray (5Y 4/1) clay films on faces of peds; few slickensides and pressure faces on peds; common medium prominent light olive brown (2.5Y 5/4) and few medium prominent dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.

2BCg—45 to 58 inches; gray (5Y 5/1) silty clay; weak very coarse prismatic structure; very firm; few fine white (10YR 8/1) very weakly cemented calcium carbonate nodules and weakly cemented calcium carbonate concretions throughout; common coarse prominent brown (10YR 4/3) and common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 1 percent fine gravel; slightly effervescent; moderately alkaline; clear smooth boundary.

2Cg—58 to 66 inches; gray (5Y 5/1) silty clay; massive; very firm; many medium prominent olive brown (2.5Y 4/4) masses of iron accumulation in the matrix; 3 percent fine gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the colluvium: 15 to 55 inches
Depth to carbonates: 24 to 60 inches
Depth to the base of soil development: 30 to more than 60 inches
Depth to paralithic contact (shale substratum phase): 40 to 60 inches

Ap or A horizon:
Hue—10YR or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay

Bg or Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 6
Chroma—0 to 3
Texture—silty clay or clay
Content of gravel—less than 5 percent

2BCg or 2Cg horizon:
Hue—2.5Y or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—silty clay or clay; less commonly, silty clay loam
Content of gravel—less than 10 percent

235A—Bryce silty clay, 0 to 2 percent slopes

Setting

Landform: Ground moraines and glacial lakes (relict)
Position on the landform: Toeslopes

Map Unit Composition

Bryce and similar soils: 94 percent
Dissimilar soils: 6 percent

Components of Minor Extent

Similar soils:
- Soils that have a thicker dark surface soil
- Soils that have less clay and more silt in the subsoil
- Soils that are overlain by light-colored recent deposits

Dissimilar soils:
- The somewhat poorly drained Nappanee and Swygert soils on summits and footslopes

Properties and Qualities of the Bryce Soil

Parent material: Colluvium and the underlying till
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow

Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 7.0 percent
Shrink-swell potential: High
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

553A—Bryce, shale substratum-Calamine silty clays, 0 to 2 percent slopes

Setting

Landform: Stream terraces and lake plains
Position on the landform: Toeslopes

Map Unit Composition

Bryce and similar soils: 45 percent
Calamine and similar soils: 45 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of more than 2 percent
- Soils that have shale bedrock beginning at a depth of less than 20 inches or more than 60 inches
- Soils that have a thinner or thicker surface soil
- Soils that have less clay and more silt in the subsoil

Dissimilar soils:
- The well drained High Gap soils on summits and backslopes
- The somewhat poorly drained Shadeland soils on footslopes and summits
- Soils that are occasionally flooded for brief periods

Properties and Qualities of the Bryce, Shale Substratum, Soil

Parent material: Colluvium and the underlying lacustrine deposits over shale bedrock
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: 40 to 60 inches to bedrock (paralithic)
Available water capacity: About 5.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 7.0 percent
Shrink-swell potential: High

Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Properties and Qualities of the Calamine Soil

Parent material: Colluvium and the underlying lacustrine deposits and residuum over shale bedrock
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Available water capacity: About 3.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 7.0 percent
Shrink-swell potential: High
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Bryce—2w; Calamine—2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Bryce—hydric; Calamine—hydric

Calamine Series

Drainage class: Poorly drained
Landform: Stream terraces and lake plains
Parent material: Colluvium and the underlying lacustrine deposits and residuum over shale bedrock
Taxonomic classification: Fine, mixed, superactive, mesic Typic Argiaquolls
Taxadjunct features: The Calamine soils in this survey area have more clay in the surface layer than is defined as the range for the series. Also, the clay increase in the B horizon is not sufficient for an argillic horizon. These differences, however, do not significantly affect the use and management of the soils. These soils are classified as fine, mixed, superactive, mesic Typic Endoaquolls.

Typical Pedon

Calamine silty clay, in an area of Bryce, shale substratum-Calamine silty clays, 0 to 2 percent slopes; at an elevation of 530 feet; 72 feet north and 2,595 feet west of the southeast corner of sec. 16, T. 33 N., R. 7 E.; Grundy County, Illinois; USGS Morris,

Illinois, topographic quadrangle; lat. 41 degrees 19 minutes 43 seconds N. and long. 88 degrees 25 minutes 51 seconds W., NAD 27; UTM Zone 16, Easting 0380271, Northing 4576215, NAD 83:

Ap—0 to 7 inches; black (N 2.5/) silty clay, gray (10YR 5/1) dry; weak medium granular structure; firm; common very fine roots; few fine and medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; 1 percent gravel; slightly alkaline; clear smooth boundary.

A—7 to 12 inches; very dark gray (N 3/) silty clay, dark gray (2.5Y 4/1) dry; moderate fine subangular blocky structure; firm; common very fine roots; few fine and medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; 3 percent gravel; slightly alkaline; clear smooth boundary.

Bg1—12 to 24 inches; olive gray (5Y 5/2) silty clay; moderate medium prismatic structure; firm; common very fine roots; common fine prominent strong brown (7.5YR 5/8) and common distinct yellowish brown (2.5Y 5/4) masses of iron accumulation in the matrix; 2 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

Bg2—24 to 29 inches; gray (5Y 5/1) silty clay; moderate medium prismatic structure; firm; common very fine roots; common fine prominent strong brown (7.5YR 5/8) and yellowish brown (2.5Y 5/4) masses of iron accumulation in the matrix; 2 percent gravel; strongly effervescent; slightly alkaline; clear wavy boundary.

2BCg—29 to 33 inches; 60 percent dark gray (5Y 4/1) and 40 percent gray (5Y 5/1) silty clay; weak medium prismatic structure; very firm; common very fine roots; common fine and medium prominent strong brown (7.5YR 5/8) and common fine prominent yellowish brown (2.5Y 5/6) masses of iron accumulation in the matrix; 4 percent gravel; strongly effervescent; moderately alkaline; clear wavy boundary.

2Cr—33 to 60 inches; yellowish brown (10YR 5/6) shale and siltstone; massive; very firm; common fine and medium distinct strong brown (7.5YR 5/8) and common fine distinct yellowish brown (2.5Y 5/4) masses of iron accumulation in the matrix; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to paralithic contact: 20 to 40 inches

Ap or A horizon:
Hue—10YR or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay

Btg or Bg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay or clay

2BCg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay or clay

2Cr horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6

553A—Bryce, shale substratum-Calamine silty clays, 0 to 2 percent slopes

Setting

Landform: Stream terraces and lake plains
Position on the landform: Toeslopes

Map Unit Composition

Bryce and similar soils: 45 percent
Calamine and similar soils: 45 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of more than 2 percent
- Soils that have shale bedrock beginning at a depth of less than 20 inches or more than 60 inches
- Soils that have a thinner or thicker surface soil
- Soils that have less clay and more silt in the subsoil

Dissimilar soils:
- The well drained High Gap soils on summits and backslopes
- The somewhat poorly drained Shadeland soils on footslopes and summits
- Soils that are occasionally flooded for brief periods

Properties and Qualities of the Bryce, Shale Substratum, Soil

Parent material: Colluvium and the underlying lacustrine deposits over shale bedrock
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: 40 to 60 inches to bedrock (paralithic)
Available water capacity: About 5.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 7.0 percent
Shrink-swell potential: High
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Properties and Qualities of the Calamine Soil

Parent material: Colluvium and the underlying lacustrine deposits and residuum over shale bedrock
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Available water capacity: About 3.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 7.0 percent

Shrink-swell potential: High
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Bryce—2w; Calamine—2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Bryce—hydric; Calamine—hydric

Channahon Series

Drainage class: Well drained
Landform: Stream terraces, outwash plains, and flood-plain steps
Parent material: Drift over dolostone, limestone, or sandstone bedrock
Slope range: 0 to 6 percent
Taxonomic classification: Loamy, mixed, superactive, mesic Lithic Argiudolls
Taxadjunct features: The Channahon soils in map units 817A and 817B are underlain by sandstone instead of dolostone or limestone. Also, they have a paralithic contact rather than the lithic contact that is defined for the series. These differences, however, do not significantly affect the use and management of the soils. These soils are classified as loamy, mixed, superactive, mesic Typic Argiudolls.

Typical Pedon

Channahon silt loam, 2 to 4 percent slopes; at an elevation of 530 feet; 125 feet south and 384 feet east of the northwest corner of sec. 35, T. 34 N., R. 8 E.; Grundy County, Illinois; USGS Minooka topographic quadrangle; lat. 41 degrees 23 minutes 20 seconds N. and long. 88 degrees 17 minutes 12 seconds W., NAD 27; UTM Zone 16, Easting 0392421, Northing 4582731, NAD 83:

A1—0 to 5 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine and medium granular structure; friable; common very fine to medium roots; neutral; gradual wavy boundary.
A2—5 to 11 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine and medium subangular blocky structure; friable; common very fine to medium roots; neutral; gradual wavy boundary.
Bt1—11 to 15 inches; dark yellowish brown (10YR 3/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; many distinct very dark gray (10YR 3/1) organic coatings in root channels and pores; common very fine and fine roots; neutral; gradual wavy boundary.
Bt2—15 to 18 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and few prominent very dark gray (10YR 3/1) organic coatings in root channels and pores; common very fine to medium roots; 2 percent rock fragments; neutral; clear smooth boundary.

2R—18 inches; gray (10YR 6/1), unweathered limestone bedrock; strongly effervescent.

Range in Characteristics

Thickness of the mollic epipedon: 7 to 15 inches
Depth to lithic contact: 10 to 20 inches

A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam; fine sandy loam in pedons underlain by sandstone
Content of rock fragments—less than 15 percent

Bt horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 or 4
Texture—loam, silt loam, clay loam, or silty clay loam; loam, sandy loam, or fine sandy loam or the gravelly analogs of these textures in pedons underlain by sandstone
Content of rock fragments—less than 20 percent

315A—Channahon silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits

Map Unit Composition

Channahon and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have bedrock beginning at a depth of less than 10 inches or more than 20 inches
- Soils that have less sand and more clay in the subsoil
- Soils that have slopes of more than 2 percent
- Soils that have sandstone or shale bedrock

Dissimilar soils:
- The poorly drained Faxon soils on toeslopes

Properties and Qualities of the Channahon Soil

Parent material: Drift over dolostone and/or limestone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Available water capacity: About 3.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None

Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3s
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

315B—Channahon silt loam, 2 to 4 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits and backslopes

Map Unit Composition

Channahon and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have bedrock beginning at a depth of less than 10 inches or more than 20 inches
- Soils that have less sand and more clay in the subsoil
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that have sandstone or shale bedrock

Dissimilar soils:
- The poorly drained Faxon soils on toeslopes

Properties and Qualities of the Channahon Soil

Parent material: Drift over dolostone and/or limestone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Available water capacity: About 3.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

315C2—Channahon silt loam, 4 to 6 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Backslopes and shoulders

Map Unit Composition

Channahon and similar soils: 94 percent
Dissimilar soils: 6 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have bedrock beginning at a depth of less than 10 inches or more than 20 inches
- Soils that have less sand and more clay in the subsoil
- Soils that have sandstone or shale bedrock

Dissimilar soils:
- The poorly drained Faxon soils on toeslopes

Properties and Qualities of the Channahon Soil

Parent material: Drift over dolostone and/or limestone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Available water capacity: About 2.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

817A—Channahon-Hesch fine sandy loams, 0 to 2 percent slopes

Setting

Landform: Flood-plain steps, stream terraces, and outwash plains
Position on the landform: Summits

Map Unit Composition

Channahon and similar soils: 50 percent
Hesch and similar soils: 40 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have bedrock beginning at a depth of less than 10 inches or more than 40 inches
- Soils that have less sand and more clay in the subsoil
- Soils that have slopes of more than 2 percent
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The poorly drained Faxon and very poorly drained Peotone soils on toeslopes

Properties and Qualities of the Channahon Soil

Parent material: Drift over sandstone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Available water capacity: About 2.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Properties and Qualities of the Hesch Soil

Parent material: Drift over sandstone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Available water capacity: About 4.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Channahon—3s; Hesch—2s
Prime farmland category: Not prime farmland
Hydric soil status: Channahon—not hydric; Hesch—not hydric

817B—Channahon-Hesch fine sandy loams, 2 to 6 percent slopes

Setting

Landform: Stream terraces, outwash plains, and flood-plain steps
Position on the landform: Backslopes and summits

Map Unit Composition

Channahon and similar soils: 50 percent
Hesch and similar soils: 40 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have bedrock beginning at a depth of less than 10 inches or more than 40 inches
- Soils that have less sand and more clay in the subsoil
- Soils that have slopes of less than 2 percent or more than 6 percent
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The poorly drained Faxon and very poorly drained Peotone soils on toeslopes

Properties and Qualities of the Channahon Soil

Parent material: Drift over sandstone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Available water capacity: About 2.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Properties and Qualities of the Hesch Soil

Parent material: Drift over sandstone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Available water capacity: About 3.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Low

Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Channahon—3e; Hesch—2e
Prime farmland category: Not prime farmland
Hydric soil status: Channahon—not hydric; Hesch—not hydric

Chatsworth Series

Drainage class: Moderately well drained
Landform: End moraines and ground moraines
Parent material: Till
Slope range: 6 to 50 percent
Taxonomic classification: Fine, illitic, mesic Oxyaquic Eutrudepts

Typical Pedon

Chatsworth silty clay, 6 to 12 percent slopes, severely eroded; at an elevation of 735 feet; 148 feet north and 1,870 feet west of the southeast corner of sec. 7, T. 24 N., R. 10 E.; Iroquois County, Illinois; USGS Buckley topographic quadrangle; lat. 40 degrees 32 minutes 48 seconds N. and long. 88 degrees 06 minutes 20 seconds W., NAD 27; UTM Zone 16, Easting 0406382, Northing 4489026, NAD 83:

Ap—0 to 2 inches; dark grayish brown (2.5Y 4/2) silty clay, light brownish gray (10YR 6/2) dry; moderate medium granular structure; firm; common medium roots; slightly effervescent; moderately alkaline; abrupt smooth boundary.

Bw1—2 to 11 inches; dark grayish brown (2.5Y 4/2) silty clay; moderate very fine and fine subangular blocky structure; firm; few medium and fine roots; few fine white (10YR 8/1) very weakly cemented calcium carbonate nodules throughout; few fine distinct olive brown (2.5Y 4/4) masses of iron accumulation in the matrix; common fine faint dark gray (5Y 4/1) iron depletions in the matrix; strongly effervescent; moderately alkaline; clear wavy boundary.

Bw2—11 to 15 inches; dark grayish brown (2.5Y 4/2) silty clay; weak medium prismatic structure parting to moderate fine and medium angular blocky; very firm; few fine roots between peds; common faint dark gray (5Y 4/1) coatings on faces of peds; common medium white (10YR 8/1) very weakly cemented calcium carbonate nodules throughout; common fine distinct olive brown (2.5Y 4/4) masses of iron accumulation in the matrix; common fine faint dark gray (5Y 4/1) iron depletions in the matrix; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bw3—15 to 22 inches; grayish brown (2.5Y 5/2) silty clay; moderate medium prismatic structure parting to weak medium subangular blocky; very firm; few fine roots between peds; common faint dark gray (5Y 4/1) coatings on faces of peds; common medium white (10YR 8/1) very weakly cemented calcium carbonate nodules throughout; common fine distinct olive brown (2.5Y 4/4) masses of iron accumulation in the matrix; common fine faint dark gray (5Y 4/1) iron depletions in the matrix; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cd1—22 to 35 inches; dark grayish brown (2.5Y 4/2) silty clay; massive with some horizontal and vertical cleavage; very firm; few fine roots along cleavage planes; many faint gray (5Y 5/1) coatings along cleavage planes; few medium white (10YR 8/1) very weakly cemented calcium carbonate nodules along cleavage planes; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many fine faint gray (5Y 5/1) iron depletions in the matrix; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cd2—35 to 60 inches; dark gray (5Y 4/1) silty clay; massive with some horizontal and vertical cleavage; very firm; very few fine roots along widely spaced cleavage planes; many faint gray (5Y 5/1) coatings along cleavage planes; few medium white (10YR 8/1) very weakly cemented calcium carbonate nodules along cleavage planes; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 0 to 20 inches
Depth to the base of soil development: 10 to 24 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 or 4
Chroma—1 or 2
Texture—silty clay or silty clay loam

Bw horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 or 3
Texture—silty clay or clay; less commonly, silty clay loam

Cd horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—1 to 6
Texture—silty clay, clay, or silty clay loam

241D3—Chatsworth silty clay, 6 to 12 percent slopes, severely eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes

Map Unit Composition

Chatsworth and similar soils: 95 percent
Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 6 percent or more than 12 percent
- Soils that have carbonates beginning at a depth of more than 20 inches
- Soils in which the content of clay increases below the surface layer
- Soils that have less clay and more silt or sand throughout the profile

Dissimilar soils:
- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Chatsworth Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 10 to 24 inches to dense material

Available water capacity: About 3.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

241E3—Chatsworth silty clay, 12 to 20 percent slopes, severely eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes

Map Unit Composition

Chatsworth and similar soils: 96 percent
Dissimilar soils: 4 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 12 percent or more than 20 percent
- Soils that have carbonates beginning at a depth of more than 20 inches
- Soils that have less clay and more silt or sand throughout the profile

Dissimilar soils:
- The somewhat poorly drained Nappanee and Swygert soils on footslopes

Properties and Qualities of the Chatsworth Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 10 to 24 inches to dense material
Available water capacity: About 3.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.

Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

241F—Chatsworth silty clay loam, 20 to 30 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes

Map Unit Composition

Chatsworth and similar soils: 96 percent
Dissimilar soils: 4 percent

Components of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have slopes of less than 20 percent or more than 30 percent
- Soils that have less clay and more silt or sand throughout the profile

Dissimilar soils:
- The somewhat poorly drained Nappanee and Swygert soils on footslopes

Properties and Qualities of the Chatsworth Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 10 to 24 inches to dense material
Available water capacity: About 3.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

241G—Chatsworth silty clay loam, 30 to 50 percent slopes

Setting

Landform: End moraines
Position on the landform: Backslopes

Map Unit Composition

Chatsworth and similar soils: 96 percent
Dissimilar soils: 4 percent

Components of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have slopes of less than 30 percent or more than 50 percent
- Soils that have less clay and more silt or sand throughout the profile

Dissimilar soils:
- The somewhat poorly drained Nappanee and Swygert soils on footslopes

Properties and Qualities of the Chatsworth Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 10 to 24 inches to dense material
Available water capacity: About 3.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Chenoa Series

Drainage class: Somewhat poorly drained
Landform: Ground moraines and end moraines
Parent material: Loess or other silty material and the underlying till
Slope range: 0 to 2 percent
Taxonomic classification: Fine, illitic, mesic Aquic Argiudolls

Typical Pedon

Chenoa silty clay loam, 0 to 2 percent slopes; at an elevation of 691 feet; 105 feet south and 865 feet west of the northeast corner of sec. 2, T. 27 N., R. 3 E.; Livingston County, Illinois; USGS Flanagan South topographic quadrangle; lat. 40 degrees 50 minutes 31 seconds N. and long. 88 degrees 50 minutes 13 seconds W., NAD 27; UTM Zone 16, Easting 0345124, Northing 4522838, NAD 83:

Ap—0 to 12 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few fine roots; neutral; abrupt smooth boundary.

BA—12 to 16 inches; brown (10YR 4/3) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; few fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt—16 to 21 inches; brown (10YR 4/3) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

Btg1—21 to 26 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; many distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common medium black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

Btg2—26 to 32 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common medium black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

2Bt—32 to 36 inches; light olive brown (2.5Y 5/4) silty clay loam; weak medium prismatic structure parting to weak medium angular blocky; firm; few very fine roots; few distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common medium distinct gray (2.5Y 6/1) iron depletions in the matrix; 3 percent gravel; slightly alkaline; clear smooth boundary.

2C—36 to 60 inches; light olive brown (2.5Y 5/4) silty clay loam; massive with horizontal and vertical cleavage; firm; few prominent light brownish gray (10YR 6/2) coatings on vertical cleavage planes; common medium distinct gray (2.5Y 6/1) iron depletions in the matrix; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess or other silty material: 20 to 40 inches
Depth to carbonates: 25 to 45 inches
Depth to the base of soil development: 25 to 50 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3

Chroma—1 or 2
Texture—silty clay loam

Bt or Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silty clay

2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silt loam
Content of gravel—less than 10 percent

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam
Content of gravel—2 to 10 percent

614A—Chenoa silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines (fig. 4)
Position on the landform: Summits and footslopes

Map Unit Composition

Chenoa and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a thinner surface layer
- Soils that have less clay and more silt in the subsoil
- Soils that have till beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have less silt and more sand in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Chenoa Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent

Figure 4.—An area of nearly level Chenoa soils in the foreground and gently sloping and sloping Graymont soils in the background; on a ground moraine.

Shrink-swell potential: High
Perched seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Comfrey Series

Drainage class: Poorly drained
Landform: Flood plains
Parent material: Alluvium
Slope range: 0 to 2 percent
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Cumulic Endoaquolls

Typical Pedon

Comfrey loam, 0 to 2 percent slopes, frequently flooded; at an elevation of 725 feet; 570 feet north and 1,400 feet west of the center of sec. 25, T. 43 N., R. 2 E.; Winnebago County, Illinois; USGS Cherry Valley topographic quadrangle; lat. 42 degrees 10 minutes 32 seconds N. and long. 88 degrees 57 minutes 17 seconds W., NAD 27; UTM Zone 16, Easting 0338549, Northing 4671120, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak fine and medium granular structure; friable; many very fine roots; neutral; clear smooth boundary.

A1—7 to 15 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak fine and medium granular structure; friable; common very fine roots; many distinct black (N 2.5/) organic coatings on faces of peds; common fine brown (7.5YR 4/4) very weakly cemented iron and manganese oxide concretions throughout; neutral; clear smooth boundary.

A2—15 to 26 inches; very dark gray (10YR 3/1) loam, gray (10YR 5/1) dry; weak fine and medium granular structure; friable; common very fine roots; many distinct black (N 2.5/) organic coatings on faces of peds; common fine brown (7.5YR 4/4) very weakly cemented iron and manganese oxide concretions throughout; neutral; clear smooth boundary.

Bg—26 to 37 inches; gray (2.5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; common very fine roots; few distinct very dark gray (2.5Y 3/1) organic coatings on faces of peds and in pores; many fine and medium yellowish brown (10YR 5/6) very weakly cemented iron oxide concretions throughout; common fine distinct gray (10YR 6/1) iron depletions in the matrix; neutral; gradual smooth boundary.

Cg1—37 to 57 inches; gray (5Y 5/1), stratified clay loam and loam; massive; friable; few very fine roots; many fine and medium yellowish brown (10YR 5/6) very weakly cemented iron oxide concretions throughout; common fine prominent gray (10YR 6/1) iron depletions in the matrix; neutral; gradual smooth boundary.

Cg2—57 to 63 inches; 40 percent gray (5Y 5/1), 30 percent yellowish brown (10YR 5/6), and 30 percent dark gray (2.5Y 4/1), stratified loam and sandy loam; massive; friable; 12 percent gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to carbonates: More than 18 inches
Depth to the base of soil development: 24 to 50 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—loam or clay loam

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 5
Chroma—0 to 2
Texture—loam, clay loam, or silty clay loam

Cg horizon:
Hue—2.5Y or 5Y
Value—4 or 5

Chroma—1 or 2
Texture—loam, clay loam, or sandy loam or stratified with these textures
Content of gravel—less than 15 percent

3776A—Comfrey loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Comfrey and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that are overlain by light-colored recent deposits
- Soils that have a thinner surface soil
- Soils that have less sand and more silt or clay in the upper one-half of the profile
- Soils that have more gravel in the lower part of the profile
- Soils that have carbonates within a depth of 18 inches

Dissimilar soils:
- Very poorly drained organic soils on flood plains
- Poorly drained, calcareous soils on flood plains

Properties and Qualities of the Comfrey Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 5.0 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding (frequency, months): Frequent, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Hydric

8776A—Comfrey loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Comfrey and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that are overlain by light-colored recent deposits
- Soils that have a thinner surface soil
- Soils that have less sand and more clay or silt in the upper one-half of the profile
- Soils that have more gravel in the lower part of the profile
- Soils that have carbonates within a depth of 18 inches

Dissimilar soils:
- The well drained Ross soils on flood plains
- Poorly drained, calcareous soils on flood plains

Properties and Qualities of the Comfrey Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 5.0 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding (frequency, months): Occasional, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Cresent Series

Drainage class: Well drained
Landform: Outwash plains and stream terraces
Parent material: Outwash
Slope range: 0 to 5 percent
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Cresent loam, 0 to 2 percent slopes; at an elevation of 510 feet; 255 feet south and 2,346 feet west of the northeast corner of sec. 28, T. 24 N., R. 5 W.; Tazewell County, Illinois; USGS Pekin topographic quadrangle; lat. 40 degrees 30 minutes 40 seconds N. and long. 89 degrees 40 minutes 15 seconds W., NAD 27; UTM Zone 16, Easting 0273706, Northing 4487920, NAD 83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; weak medium granular structure; friable; few very fine roots; moderately acid; abrupt smooth boundary.

A—8 to 15 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure; friable; few very fine roots; moderately acid; clear smooth boundary.

AB—15 to 18 inches; dark brown (10YR 3/3) loam, brown (10YR 5/3) dry; weak fine and medium subangular blocky structure; friable; few very fine roots; common faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; moderately acid; clear smooth boundary.

Bt1—18 to 27 inches; brown (10YR 4/3) clay loam; moderate medium subangular blocky structure; friable; few very fine roots; common faint very dark grayish brown (10YR 3/2) organo-clay coatings on faces of peds; moderately acid; clear smooth boundary.

Bt2—27 to 34 inches; dark yellowish brown (10YR 4/4) loam; moderate medium subangular blocky structure; friable; few very fine roots; common faint brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt3—34 to 46 inches; brown (7.5YR 4/4) loam; moderate medium subangular blocky structure; friable; few very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; slightly acid; abrupt smooth boundary.

2C1—46 to 60 inches; brown (7.5YR 4/4) loamy sand grading to sand with depth; massive; very friable; neutral; gradual smooth boundary.

2C2—60 to 80 inches; brown (7.5YR 4/4) sand; single grain; loose; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to the base of soil development: 40 to 60 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—loam

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture—clay loam, sandy clay loam, or loam
Content of gravel—less than 5 percent

2C horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—sand or loamy sand
Content of gravel—less than 10 percent

672A—Cresent loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits

Map Unit Composition

Cresent and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have less sand and more clay in the lower part of the profile
- Soils that have less sand and more silt in the upper part of the profile
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have carbonates at a depth of less than 40 inches

Dissimilar soils:
- The somewhat poorly drained Darroch soils on footslopes and summits
- The poorly drained Selma soils on toeslopes

Properties and Qualities of the Cresent Soil

Parent material: Outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

672B—Cresent loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Shoulders and summits

Map Unit Composition

Cresent and similar soils: 87 percent
Dissimilar soils: 13 percent

Components of Minor Extent

Similar soils:
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have less sand and more clay in the lower part of the profile
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that have carbonates at a depth of less than 40 inches
- Soils that are moderately eroded

Dissimilar soils:
- The somewhat poorly drained Darroch soils on footslopes and summits
- The poorly drained Selma soils on toeslopes

Properties and Qualities of the Cresent Soil

Parent material: Outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Darroch Series

Drainage class: Somewhat poorly drained
Landform: Outwash plains
Parent material: Thin mantle of loess or other silty material and the underlying outwash
Slope range: 0 to 2 percent
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Darroch silt loam, 0 to 2 percent slopes; at an elevation of 810 feet; 2,600 feet east and 60 feet south of the northwest corner of sec. 10, T. 25 N., R. 8 W.; Benton County, Indiana; USGS Wadena, Indiana, topographic quadrangle; lat. 40 degrees 38 minutes 00 seconds N. and long. 87 degrees 18 minutes 52 seconds W., NAD 27; UTM Zone 16, Easting 0473415, Northing 4498100, NAD 83:

Ap—0 to 11 inches; very dark gray (10YR 3/1) silt loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; many very fine roots; neutral; abrupt wavy boundary.

A—11 to 15 inches; very dark gray (10YR 3/1) silt loam, dark gray (10YR 4/1) dry; moderate medium subangular blocky structure; friable; many very fine roots; neutral; clear wavy boundary.

Btg1—15 to 21 inches; grayish brown (10YR 5/2) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common distinct very dark gray (10YR 3/1) organo-clay films lining root channels; many medium distinct yellowish brown (10YR 5/4) and prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; few medium faint dark gray (10YR 4/1) iron depletions in the matrix; slightly acid; clear wavy boundary.

2Btg2—21 to 29 inches; grayish brown (10YR 5/2) loam; moderate medium subangular blocky structure; friable; few very fine roots; common dark gray (10YR 4/1) fillings in root channels; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear wavy boundary.

2C1—29 to 46 inches; yellowish brown (10YR 5/4) silt loam that has thin strata of fine sand; massive; friable; few dark grayish brown (10YR 4/2) fillings in root channels; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; many medium distinct gray (10YR 6/1) iron depletions in the matrix; strongly effervescent; moderately alkaline; gradual wavy boundary.

2C2—46 to 60 inches; yellowish brown (10YR 5/4) silt loam that has thin strata of fine sand and silty clay loam; massive; friable; few black (N 2.5/) very weakly cemented iron and manganese oxide nodules throughout; common medium prominent yellowish brown (10YR 5/8) and few medium distinct dark yellowish brown (10YR 4/6) masses of iron accumulation in the matrix; common medium distinct gray (10YR 6/1) iron depletions in the matrix; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to carbonates: 24 to 45 inches
Depth to the base of soil development: 24 to 45 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam or loam

Btg or Bt horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 7
Chroma—1 to 6
Texture—silty clay loam, silt loam, clay loam, or loam

2Btg or 2Bt horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 7
Chroma—1 to 6
Texture—sandy clay loam, loam, sandy loam, fine sandy loam, or clay loam
Content of gravel—less than 7 percent

2C or 2Cg horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—1 to 6
Texture—loam or silt loam with thin strata of other textures
Content of gravel—less than 15 percent

740A—Darroch silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains (fig. 5)
Position on the landform: Footslopes and summits

Map Unit Composition

Darroch and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have till in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have more gravel in the lower part of the profile
- Soils that have carbonates beginning at a depth of more than 45 inches

Dissimilar soils:
- The well drained Cresent and Proctor soils on summits and backslopes
- The poorly drained Selma soils on toeslopes

Properties and Qualities of the Darroch Soil

Parent material: Thin mantle of loess or other silty material and the underlying outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Drummer Series

Drainage class: Poorly drained
Landform: Outwash plains and ground moraines
Parent material: Loess or other silty material and the underlying outwash
Slope range: 0 to 2 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Figure 5.—A field of no-till beans planted in corn stubble in an area of Darroch silt loam, 0 to 2 percent slopes.

Typical Pedon

Drummer silty clay loam, 0 to 2 percent slopes; at an elevation of 735 feet; 1,400 feet south and 200 feet east of the northwest corner of sec. 2, T. 25 N., R. 6 E.; Livingston County, Illinois; USGS Forrest South topographic quadrangle; lat. 40 degrees 40 minutes 06 seconds N. and long. 88 degrees 29 minutes 48 seconds W., NAD 27; UTM Zone 16, Easting 0373479, Northing 4503002, NAD 83:

Ap—0 to 10 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.

A—10 to 14 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few very fine roots; neutral; clear smooth boundary.

BAg—14 to 18 inches; dark gray (10YR 4/1) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bg—18 to 24 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix;

few fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; neutral; clear smooth boundary.

Btg1—24 to 30 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate fine prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; few distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; neutral; clear smooth boundary.

Btg2—30 to 42 inches; grayish brown (2.5Y 5/2) silt loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; few distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many medium faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; neutral; clear smooth boundary.

2Btg3—42 to 50 inches; grayish brown (2.5Y 5/2), stratified silt loam and loam; weak coarse prismatic structure; friable; few very fine roots; few distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many medium faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 2 percent gravel; neutral; clear smooth boundary.

2Cg—50 to 60 inches; light brownish gray (2.5Y 6/2), stratified silt loam and loam; massive; friable; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; many coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium faint grayish brown (2.5Y 5/2) iron depletions in the matrix; very slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess or other silty material: 40 to 60 inches
Depth to carbonates: 40 to 60 inches
Depth to the base of soil development: 42 to 60 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam

BAg, Bg, or Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—1 or 2
Texture—silty clay loam or silt loam

2Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—loam, silt loam, sandy loam, sandy clay loam, or clay loam; stratified in some pedons

2Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—stratified loam, silt loam, sandy loam, clay loam, silty clay loam, or loamy sand

152A—Drummer silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and outwash plains
Position on the landform: Toeslopes

Map Unit Composition

Drummer and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have outwash beginning at a depth of less than 40 inches or more than 60 inches
- Soils that have till in the lower part of the profile
- Soils that have more gravel in the lower part of the profile
- Soils that have a thicker surface soil
- Soils that are overlain by light-colored recent deposits

Dissimilar soils:
- The somewhat poorly drained Brenton and Darroch soils on footslopes and summits
- Poorly drained, calcareous soils on toeslopes

Properties and Qualities of the Drummer Soil

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

536—Dumps

This map unit consists of nearly level to very steep accumulations of refuse derived from the washing and separation of coal. The accumulations are shale, siltstone, and coal fragments and dolostone and sandstone cobbles. Mine spoil is very acidic and supports little or no vegetation.

Map Unit Composition

Dumps: 97 percent
Dissimilar components: 3 percent

Components of Minor Extent

Dissimilar components:
- The well drained, loamy Orthents on summits and backslopes
- Areas of undisturbed soils along the edge of the refuse areas
- Small areas of water, some of which are acidic

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland
Hydric soil status: Not applicable

Elliott Series

Drainage class: Somewhat poorly drained
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 0 to 4 percent
Taxonomic classification: Fine, illitic, mesic Aquic Argiudolls

Typical Pedon

Elliott silt loam, 0 to 2 percent slopes; at an elevation of 704 feet; 690 feet south and 2,436 feet west of the center of sec. 21, T. 29 N., R. 8 E.; Livingston County, Illinois; USGS Cullom topographic quadrangle; lat. 40 degrees 58 minutes 12 seconds N. and long. 88 degrees 19 minutes 19 seconds W., NAD 27; UTM Zone 16, Easting 0388762, Northing 4536262, NAD 83:

Ap—0 to 6 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common fine roots; moderately acid; abrupt smooth boundary.

A—6 to 11 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common fine roots; slightly acid; clear smooth boundary.

Bt1—11 to 16 inches; light olive brown (2.5Y 5/4) silty clay; moderate fine subangular blocky structure; friable; common fine roots; few distinct black (10YR 2/1) organic coatings on faces of peds; many distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; neutral; clear smooth boundary.

2Bt2—16 to 23 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; 1 percent gravel; neutral; clear smooth boundary.

2Bt3—23 to 28 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 1 percent gravel; neutral; clear smooth boundary.

2Bt4—28 to 35 inches; olive brown (2.5Y 4/4) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; firm; few fine roots; many distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; few medium white (10YR 8/1) calcium carbonate concretions throughout; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 1 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2Bt5—35 to 41 inches; olive brown (2.5Y 4/4) silty clay loam; weak fine prismatic structure parting to moderate medium angular blocky; firm; few fine roots; common distinct gray (5Y 6/1) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 2 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.

2Cd—41 to 60 inches; olive brown (2.5Y 4/4) silty clay loam; massive; firm; common fine prominent gray (5Y 5/1) iron depletions in the matrix; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess or other silty material: Less than 20 inches
Depth to carbonates: 17 to 40 inches
Depth to the base of soil development: 20 to 45 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

Bt or 2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silty clay
Content of gravel—less than 10 percent

2Cd horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam
Content of gravel—less than 15 percent

146A—Elliott silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and footslopes

Map Unit Composition

Elliott and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that formed in more than 20 inches of loess or other silty material
- Soils that have slopes of more than 2 percent
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have a thinner subsurface layer

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Elliott Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 20 to 45 inches to dense material
Available water capacity: About 8.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Perched seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

146B—Elliott silt loam, 2 to 4 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes and footslopes

Map Unit Composition

Elliott and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that formed in more than 20 inches of loess or other silty material

- Soils that are moderately eroded
- Soils that have slopes of less than 2 percent

Dissimilar soils:

- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Elliott Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 20 to 45 inches to dense material
Available water capacity: About 8.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Perched seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Elpaso Series

Drainage class: Poorly drained
Landform: Ground moraines and end moraines
Parent material: Loess or other silty material and the underlying till
Slope range: 0 to 2 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Elpaso silty clay loam, 0 to 2 percent slopes; at an elevation of 715 feet; 210 feet north and 320 feet west of the southeast corner of sec. 30, T. 27 N., R. 2 E.; Woodford County, Illinois; USGS Benson topographic quadrangle; lat. 40 degrees 45 minutes 59.7 seconds N. and long. 89 degrees 01 minute 34 seconds W., NAD 27; UTM Zone 16, Easting 0328989, Northing 4514825, NAD 83:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak very fine granular structure; firm; many very fine and fine roots; moderately acid; abrupt smooth boundary.

A—7 to 21 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; firm; many very fine and fine roots; moderately acid; gradual wavy boundary.

Bg—21 to 35 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; friable; many fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine black (10YR 2/1) very weakly cemented iron and

manganese oxide concretions throughout; few fine distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; neutral; gradual wavy boundary.

Btg1—35 to 44 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) and few fine distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; neutral; gradual wavy boundary.

2Btg2—44 to 53 inches; dark grayish brown (2.5Y 4/2) silt loam; weak medium and coarse subangular blocky structure; friable; few fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) and fine distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; 5 percent pebbles; slightly alkaline; clear wavy boundary.

2Btg3—53 to 69 inches; dark grayish brown (2.5Y 4/2) and olive brown (2.5Y 4/4) silty clay loam; weak medium and coarse prismatic structure; firm; few distinct dark gray (10YR 4/1) clay films on faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine distinct olive gray (5Y 5/2) iron depletions throughout; 4 percent pebbles; slightly effervescent starting at a depth of 63 inches; slightly alkaline; diffuse wavy boundary.

2C—69 to 80 inches; olive brown (2.5Y 4/4) silty clay loam; massive; firm; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine distinct olive gray (5Y 5/2) iron depletions throughout; 4 percent pebbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the loess or other silty material: 40 to 60 inches
Depth to carbonates: 35 to 65 inches
Depth to the base of soil development: 45 to 75 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam

Bg and Btg horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam or silt loam

2Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 4
Texture—loam, clay loam, silt loam, or silty clay loam
Content of gravel—1 to 10 percent

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—loam, clay loam, silt loam, or silty clay loam
Content of gravel—1 to 10 percent

356A—Elpaso silty clay loam, 0 to 2 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Toeslopes

Map Unit Composition

Elpaso and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have carbonates within a depth of 35 inches
- Soils that have a zone of glaciofluvial deposits above the till
- Soils that have till beginning at a depth of less than 40 inches or more than 60 inches
- Soils that are overlain by light-colored recent deposits

Dissimilar soils:
- The moderately well drained Graymont soils on summits
- The somewhat poorly drained Chenoa soils on summits and footslopes
- Poorly drained, calcareous soils on toeslopes

Properties and Qualities of the Elpaso Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Faxon Series

Drainage class: Poorly drained
Landform: Outwash plains and stream terraces
Parent material: Drift over dolostone or drift and residuum over sandstone bedrock
Slope range: 0 to 2 percent
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Faxon silt loam, 0 to 2 percent slopes; at an elevation of 640 feet; 1,440 feet north and 714 feet east of the southwest corner of sec. 32, T. 31 N., R. 14 E.; Kankakee County, Illinois; USGS St. Anne topographic quadrangle; lat. 41 degrees 07 minutes 28 seconds N. and long. 87 degrees 38 minutes 24 seconds W., NAD 27; UTM Zone 16, Easting 0446282, Northing 4552773, NAD 83:

Ap—0 to 5 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common very fine roots; neutral; gradual wavy boundary.

A—5 to 10 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; friable; common very fine roots; neutral; clear smooth boundary.

AB—10 to 13 inches; 90 percent very dark gray (10YR 3/1) and 10 percent dark grayish brown (2.5Y 4/2) clay loam, gray (10YR 5/1) dry; weak fine subangular blocky structure parting to weak fine granular; friable; common very fine roots; neutral; gradual wavy boundary.

Bg1—13 to 19 inches; dark grayish brown (2.5Y 4/2) clay loam; moderate fine and medium prismatic structure parting to moderate fine subangular blocky; friable; common very fine roots; few distinct very dark gray (2.5Y 3/1) organic coatings on faces of peds and in pores; common fine prominent yellowish brown (10YR 5/8) and strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; neutral; gradual wavy boundary.

Bg2—19 to 25 inches; dark grayish brown (2.5Y 4/2) clay loam; moderate medium subangular blocky structure; friable; common very fine roots; few distinct very dark gray (2.5Y 3/1) organic coatings on faces of peds and in pores; common fine prominent strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; 3 percent cobbles; 2 percent gravel; slightly alkaline; abrupt smooth boundary.

2R—25 inches; 70 percent white (2.5Y 8/1) and 30 percent yellow (2.5Y 7/6) dolomite bedrock; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to lithic contact: 20 to 40 inches
Depth to the base of soil development: 20 to 40 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silt loam, mucky silt loam, loam, or clay loam

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 or 5
Chroma—0 to 2

Texture—loam or clay loam
Content of rock fragments—less than 15 percent

516A—Faxon silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Toeslopes

Map Unit Composition

Faxon and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have bedrock beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have more gravel and cobbles in the lower one-half of the profile
- Soils that have less clay and more sand in the profile
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that are darker in the upper part of the subsoil

Dissimilar soils:
- The well drained Rockton soils on backslopes and summits
- Soils that are occasionally flooded

Properties and Qualities of the Faxon Soil

Parent material: Drift over dolostone
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Available water capacity: About 4.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 6.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

4516A—Faxon mucky silt loam, ponded, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Toeslopes

Map Unit Composition

Faxon and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have bedrock beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have more gravel and cobbles in the lower one-half of the profile
- Soils that have less clay and more sand in the profile
- Soils that have less sand and more silt in the upper one-half of the profile

Dissimilar soils:
- The very poorly drained Muskego soils on toeslopes

Properties and Qualities of the Faxon Soil

Parent material: Drift and residuum over sandstone bedrock
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Available water capacity: About 5.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 7.0 to 15.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): At the surface to 0.5 foot below the surface, all year
Ponding (depth, months): At the surface to 1.0 foot above the surface, all year
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 7w
Prime farmland category: Not prime farmland
Hydric soil status: Hydric

Gilford Series

Drainage class: Poorly drained
Landform: Outwash plains
Parent material: Outwash
Slope range: 0 to 2 percent
Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Gilford fine sandy loam, 0 to 2 percent slopes; at an elevation of 544 feet; 231 feet north and 75 feet east of the southwest corner of sec. 27, T. 33 N., R. 8 E.; Grundy County, Illinois; USGS Coal City topographic quadrangle; lat. 41 degrees 18 minutes 09 seconds N. and long. 88 degrees 18 minutes 17 seconds W., NAD 27; UTM Zone 16, Easting 0390775, Northing 4573153, NAD 83:

Ap—0 to 10 inches; black (10YR 2/1) fine sandy loam; weak fine granular structure; very friable; slightly alkaline; abrupt smooth boundary.

A—10 to 17 inches; very dark gray (10YR 3/1) fine sandy loam; weak medium subangular blocky structure; friable; neutral; gradual wavy boundary.

AB—17 to 22 inches; very dark grayish brown (2.5Y 3/2) fine sandy loam; weak fine and medium prismatic structure parting to moderate medium subangular blocky; friable; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine faint olive brown (2.5Y 4/4) masses of iron accumulation in the matrix; neutral; gradual smooth boundary.

Bg1—22 to 33 inches; dark grayish brown (2.5Y 4/2) fine sandy loam; weak medium prismatic structure parting to moderate medium and coarse subangular blocky; friable; few faint very dark grayish brown (2.5Y 3/2) organic coatings on faces of peds; common fine faint dark gray (10YR 4/1) weakly cemented manganese oxide nodules throughout; common fine prominent yellowish brown (10YR 5/6) and few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; neutral; gradual wavy boundary.

Bg2—33 to 41 inches; 60 percent grayish brown (2.5Y 5/2) and 40 percent dark grayish brown (2.5Y 4/2) fine sandy loam; weak coarse prismatic structure parting to weak coarse subangular blocky; friable; few fine prominent light olive brown (2.5Y 5/6) masses of iron accumulation in the matrix; neutral; gradual wavy boundary.

Cg—41 to 54 inches; light olive gray (5Y 6/2) sand; single grain; loose; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; gradual wavy boundary.

C—54 to 60 inches; yellowish brown (10YR 5/8) sand; single grain; loose; common medium prominent gray (5Y 6/1) and light olive gray (5Y 6/2) iron depletions in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the base of soil development: 24 to 50 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—fine sandy loam

Bg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—fine sandy loam or sandy loam

Cg horizon:
Hue—10YR to 5Y
Value—4 to 7
Chroma—1 to 3

Texture—loamy sand, sand, or fine sand
Content of gravel—less than 10 percent

201A—Gilford fine sandy loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Toeslopes

Map Unit Composition

Gilford and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have more than 10 percent gravel in the lower part of the profile
- Soils that have carbonates in the upper part of the profile
- Soils that have a thicker surface soil
- Soils that have less sand and more clay throughout the profile

Dissimilar soils:
- The somewhat poorly drained Ridgeville soils on footslopes and summits
- Poorly drained, calcareous soils on toeslopes

Properties and Qualities of the Gilford Soil

Parent material: Outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Low
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Granby Series

Drainage class: Poorly drained
Landform: Outwash plains and lake terraces
Parent material: Outwash

Slope range: 0 to 2 percent
Taxonomic classification: Sandy, mixed, mesic Typic Endoaquolls

Typical Pedon

Granby fine sandy loam, 0 to 2 percent slopes; at an elevation of 630 feet; 1,360 feet north and 100 feet west of the southeast corner of sec. 21, T. 29 N., R. 11 W.; Iroquois County, Illinois; USGS Donovan topographic quadrangle; lat. 40 degrees 59 minutes 02 seconds N. and long. 87 degrees 34 minutes 50 seconds W., NAD 27; UTM Zone 16, Easting 0451165, Northing 4537132, NAD 83:

Ap—0 to 8 inches; black (10YR 2/1) fine sandy loam, dark gray (10YR 4/1) dry; weak fine granular structure; very friable; neutral; abrupt smooth boundary.

A—8 to 17 inches; very dark grayish brown (10YR 3/2) loamy sand, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure parting to weak medium granular; very friable; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine faint dark grayish brown (2.5Y 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bg1—17 to 23 inches; dark grayish brown (2.5Y 4/2) loamy fine sand; weak fine subangular blocky structure; very friable; few coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many coarse faint dark gray (10YR 4/1) iron depletions in the matrix; neutral; clear smooth boundary.

Bg2—23 to 30 inches; dark grayish brown (2.5Y 4/2) loamy fine sand; weak medium subangular blocky structure; very friable; many medium distinct olive brown (2.5Y 4/4) masses of iron and manganese accumulation in the matrix; very dark grayish brown (2.5Y 3/2) krotovina at a depth of 25 to 30 inches; many coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly effervescent; slightly alkaline; clear smooth boundary.

Cg1—30 to 40 inches; 80 percent grayish brown (10YR 5/2) and 20 percent brown (10YR 5/3) fine sand; single grain; loose; few fine prominent strong brown (7.5YR 4/6) weakly cemented iron and manganese oxide nodules throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; strongly effervescent; moderately alkaline; gradual smooth boundary.

Cg2—40 to 76 inches; olive gray (5Y 5/2) fine sand; single grain; loose; common medium prominent dark yellowish brown (10YR 4/6) masses of iron accumulation in the matrix; strongly effervescent; moderately alkaline; gradual smooth boundary.

Cg3—76 to 86 inches; gray (2.5Y 5/1) fine sand; single grain; loose; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to the base of soil development: 20 to 52 inches

Ap or A horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—fine sandy loam, sand, loamy fine sand, or loamy sand

Bg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 3
Texture—fine sand, sand, loamy sand, or loamy fine sand
Content of gravel—less than 5 percent

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 7
Chroma—1 to 4
Texture—sand, fine sand, loamy fine sand, or loamy sand
Content of gravel—less than 5 percent

513A—Granby fine sandy loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and lake terraces
Position on the landform: Toeslopes

Map Unit Composition

Granby and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a thicker surface soil
- Soils that have less sand and more clay in the subsoil
- Soils that have more than 5 percent gravel in the lower part of the profile

Dissimilar soils:
- The somewhat poorly drained Watseka soils on summits and footslopes
- Very poorly drained organic soils on toeslopes
- Poorly drained, calcareous soils on toeslopes

Properties and Qualities of the Granby Soil

Parent material: Outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 5.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Low
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Not prime farmland
Hydric soil status: Hydric

Graymont Series

Drainage class: Moderately well drained
Landform: Ground moraines and end moraines
Parent material: Loess or other silty material and the underlying till
Slope range: 2 to 10 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Taxadjunct features: The Graymont soil in map unit 541C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalf.

Typical Pedon

Graymont silt loam, 2 to 5 percent slopes; at an elevation of 704 feet; 2,100 feet north and 100 feet east of the southwest corner of sec. 28, T. 28 N., R. 3 E.; Livingston County, Illinois; USGS Flanagan Southwest topographic quadrangle; lat. 40 degrees 51 minutes 41 seconds N. and long. 88 degrees 53 minutes 30 seconds W., NAD 27; UTM Zone 16, Easting 0340565, Northing 4525111, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few very fine roots; slightly acid; abrupt smooth boundary.

AB—7 to 12 inches; very dark brown (10YR 2/2) silt loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to moderate fine granular; friable; few very fine roots; slightly acid; clear smooth boundary.

Bt1—12 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine angular blocky structure; friable; few very fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—19 to 24 inches; yellowish brown (10YR 5/4 and 5/6) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt3—24 to 28 inches; yellowish brown (10YR 5/4 and 5/6) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

Bt4—28 to 33 inches; brown (10YR 5/3) silt loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint light brownish gray (10YR 6/2) iron depletions in the matrix; neutral; clear smooth boundary.

2Btg—33 to 38 inches; grayish brown (2.5Y 5/2) silty clay loam; weak fine prismatic structure; firm; few very fine roots; few distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; common fine distinct light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; 3 percent gravel; neutral; clear smooth boundary.

2Cg—38 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; few fine black (7.5YR 2.5/1) very weakly cemented iron and manganese oxide concretions throughout; few fine white (10YR 8/1) calcium carbonate concretions throughout;

few fine prominent light olive brown (2.5Y 5/6) masses of iron accumulation in the matrix; few fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 20 inches
Thickness of the loess or other silty material: 20 to 40 inches
Depth to carbonates: 24 to 40 inches
Depth to the base of soil development: 24 to 45 inches

Ap or AB horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam
Content of gravel—1 to 10 percent

2Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam
Content of gravel—2 to 15 percent

541B—Graymont silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines and end moraines (fig. 4)
Position on the landform: Backslopes and summits

Map Unit Composition

Graymont and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that have till beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have less silt and more sand in the upper one-half of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Graymont Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

541C2—Graymont silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines (fig. 4)
Position on the landform: Backslopes and shoulders

Map Unit Composition

Graymont and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have till beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have slopes of less than 5 percent or more than 10 percent
- Soils that have less silt and more sand in the upper one-half of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet

Dissimilar soils:
- The nearly level, somewhat poorly drained Chenoa soils on summits and footslopes
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Graymont Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Hesch Series

Drainage class: Well drained
Landform: Flood-plain steps, outwash plains, and stream terraces
Parent material: Drift over sandstone
Slope range: 2 to 6 percent
Taxonomic classification: Coarse-loamy, mixed, active, mesic Typic Argiudolls

Typical Pedon

Hesch fine sandy loam, in an area of Channahon-Hesch fine sandy loams, 2 to 6 percent slopes; at an elevation of 505 feet; 390 feet south and 1,765 feet east of the northwest corner of sec. 26, T. 33 N., R. 5 E.; La Salle County, Illinois; lat. 41 degrees 18 minutes 36 seconds N. and long. 88 degrees 37 minutes 22 seconds W., NAD 27; UTM Zone 16, Easting 0364161, Northing 4574431, NAD 83:

Ap—0 to 6 inches; very dark gray (10YR 3/1) fine sandy loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; common very fine roots; 1 percent channers; slightly acid; clear smooth boundary.
A—6 to 11 inches; 94 percent very dark gray (10YR 3/1) and 6 percent brown (7.5YR 4/4) fine sandy loam, gray (10YR 5/1) dry; weak fine and medium subangular blocky structure parting to weak fine granular; friable; common very fine roots; 1 percent channers; neutral; clear wavy boundary.
Bt1—11 to 18 inches; brown (7.5YR 4/4) fine sandy loam; moderate medium subangular blocky structure; friable; common very fine roots; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few distinct brown (10YR 4/3) clay films on faces of peds: 1 percent channers; neutral; clear wavy boundary.
Bt2—18 to 23 inches; strong brown (7.5YR 4/6) sandy loam; weak medium subangular blocky structure; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine and medium distinct strong

brown (7.5YR 5/8) masses of iron accumulation in the matrix; 12 percent channers; clear wavy boundary.

2Cr—23 inches; light olive brown (2.5Y 5/3), partially weathered sandstone bedrock; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 16 inches
Depth to paralithic contact: 20 to 40 inches
Depth to the base of soil development: 20 to 40 inches

Ap or A horizon:
Hue—10YR or 7.5YR
Value—2 to 3
Chroma—1 to 3
Texture—fine sandy loam
Content of rock fragments—less than 12 percent

Bt horizon:
Hue—10YR or 7.5YR
Value—3 to 6
Chroma—3 to 6
Texture—fine sandy loam, sandy loam, or loam
Content of rock fragments—less than 12 percent

BC or C horizon (where present):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—fine sandy loam, loamy fine sand, or sand
Content of rock fragments—less than 15 percent

817A—Channahon-Hesch fine sandy loams, 0 to 2 percent slopes

Setting

Landform: Flood-plain steps, stream terraces, and outwash plains
Position on the landform: Summits

Map Unit Composition

Channahon and similar soils: 50 percent
Hesch and similar soils: 40 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have bedrock beginning at a depth of less than 10 inches or more than 40 inches
- Soils that have less sand and more clay in the subsoil
- Soils that have slopes of more than 2 percent
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The poorly drained Faxon soils on toeslopes

Properties and Qualities of the Channahon Soil

Parent material: Drift over sandstone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Available water capacity: About 2.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Properties and Qualities of the Hesch Soil

Parent material: Drift over sandstone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Available water capacity: About 4.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Channahon—3s; Hesch—2s
Prime farmland category: Not prime farmland
Hydric soil status: Channahon—not hydric; Hesch—not hydric

817B—Channahon-Hesch fine sandy loams, 2 to 6 percent slopes

Setting

Landform: Stream terraces, outwash plains, and flood-plain steps
Position on the landform: Backslopes and summits

Map Unit Composition

Channahon and similar soils: 50 percent
Hesch and similar soils: 40 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have bedrock beginning at a depth of less than 10 inches or more than 40 inches
- Soils that have less sand and more clay in the subsoil
- Soils that have slopes of less than 2 percent or more than 6 percent
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The poorly drained Faxon soils on toeslopes

Properties and Qualities of the Channahon Soil

Parent material: Drift over sandstone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Available water capacity: About 2.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Properties and Qualities of the Hesch Soil

Parent material: Drift over sandstone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Available water capacity: About 3.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: Channahon—3e; Hesch—2e
Prime farmland category: Not prime farmland
Hydric soil status: Channahon—not hydric; Hesch—not hydric

High Gap Series

Drainage class: Well drained
Landform: Stream terraces and outwash plains

Parent material: Thin mantle of loess or other silty material and the underlying outwash and residuum over sandstone and/or shale bedrock
Slope range: 2 to 5 percent
Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs
Taxadjunct features: The High Gap soils in this survey area have a thicker dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-loamy, mixed, active, mesic Mollic Hapludalfs.

Typical Pedon

High Gap silt loam, 2 to 5 percent slopes; at an elevation of 525 feet; 595 feet south and 430 feet east of the northwest corner of sec. 9, T. 33 N., R. 8 E.; Grundy County, Illinois; USGS Coal City topographic quadrangle; lat. 41 degrees 21 minutes 28 seconds N. and long. 88 degrees 19 minutes 26 seconds W., NAD 27; UTM Zone 16, Easting 0389268, Northing 4579315, NAD 83:

A—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; weak fine and medium granular structure; friable; common very fine roots; neutral; abrupt smooth boundary.
BA—9 to 17 inches; brown (10YR 4/3) silt loam; weak fine and medium subangular blocky structure; friable; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear smooth boundary.
2Bt—17 to 28 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear wavy boundary.
3BCt—28 to 36 inches; yellowish brown (10YR 5/8) fine sandy loam; weak medium subangular blocky structure; friable; common very fine and fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; common fine prominent light gray (10YR 7/2) iron depletions in the matrix; slightly acid; clear wavy boundary.
3Cr—36 to 60 inches; yellowish brown (10YR 5/8) sandstone; massive; common fine and medium prominent light gray (10YR 7/2) iron depletions in the matrix; neutral.

Range in Characteristics

Thickness of the loess or other silty material: Less than 24 inches
Depth to paralithic contact: 24 to 40 inches
Depth to the base of soil development: 24 to 40 inches

Ap or A horizon:
Hue—10YR
Value—3
Chroma—1 to 3
Texture—silt loam

Bt or 2Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 6
Texture—clay loam, loam, silty clay loam, or silt loam

3BCt or 3BC horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 8

Texture—clay loam, loam, fine sandy loam, or sandy loam
Content of rock fragments—less than 13 percent

556B—High Gap silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Backslopes and summits

Map Unit Composition

High Gap and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have a lighter colored surface layer
- Soils that have a thicker dark surface layer
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that have less sand and more silt in the subsoil
- Soils that have less clay and more sand in the subsoil
- Soils that have bedrock beginning at a depth of less than 20 inches or more than 40 inches

Dissimilar soils:
- The somewhat poorly drained Shadeland soils on footslopes
- The poorly drained Calamine and Bryce, shale substratum, soils on toeslopes

Properties and Qualities of the High Gap Soil

Parent material: Thin mantle of loess or other silty material and the underlying outwash and residuum over sandstone and/or shale bedrock
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Available water capacity: About 6.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 3.5 to 5.0 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Hononegah Series

Drainage class: Excessively drained
Landform: Outwash plains, stream terraces, and lake plains
Parent material: Eolian deposits and/or outwash
Slope range: 1 to 12 percent
Taxonomic classification: Sandy, mixed, mesic Entic Hapludolls

Typical Pedon

Hononegah loamy sand, 1 to 6 percent slopes; at an elevation of 502 feet; 1,725 feet south and 825 feet east of the northwest corner of sec. 31, T. 34 N., R. 8 E.; Grundy County, Illinois; USGS Minooka topographic quadrangle; lat. 41 degrees 22 minutes 59 seconds N. and long. 88 degrees 21 minutes 40 seconds W., NAD 27; UTM Zone 16, Easting 0386190, Northing 4582187, NAD 83:

A1—0 to 5 inches; black (10YR 2/1) loamy sand, very dark gray (10YR 3/1) dry; weak very fine and fine granular structure; very friable; many very fine and fine roots; 1 percent gravel; moderately acid; clear smooth boundary.
A2—5 to 14 inches; black (10YR 2/1) loamy sand, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to weak very fine and fine granular; very friable; common very fine and fine roots; 1 percent gravel; moderately acid; clear smooth boundary.
AB—14 to 18 inches; very dark brown (10YR 2/2) loamy sand, dark grayish brown (10YR 4/2) dry; weak very fine and fine subangular blocky structure parting to weak fine granular; very friable; common very fine and fine roots; 2 percent gravel; neutral; clear smooth boundary.
Bw1—18 to 24 inches; brown (10YR 4/3) loamy coarse sand; weak fine and medium subangular blocky structure; very friable; few very fine roots; common distinct dark brown (10YR 3/3) organic coatings on faces of peds; 3 percent gravel; neutral; clear smooth boundary.
Bw2—24 to 32 inches; dark yellowish brown (10YR 4/6) loamy coarse sand; weak medium subangular blocky structure; very friable; 5 percent gravel; neutral; clear smooth boundary.
C1—32 to 37 inches; yellowish brown (10YR 5/4) coarse sand; single grain; loose; 6 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.
C2—37 to 60 inches; yellowish brown (10YR 5/4) coarse sand; single grain; loose; 6 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to carbonates: 20 to 50 inches
Depth to the base of soil development: 20 to 40 inches

Ap, A, or AB horizon:
Hue—10YR or 7.5YR
Value—2 to 3
Chroma—1 to 3
Texture—loamy sand
Content of gravel—less than 10 percent

Bw horizon:
Hue—10YR or 7.5YR
Value—3 or 4
Chroma—3 to 6
Texture—loamy coarse sand, coarse sand, loamy sand, or sandy loam
Content of gravel—less than 15 percent

C horizon:
- Hue—10YR or 2.5Y
- Value—4 to 6
- Chroma—2 to 6
- Texture—coarse sand or loamy coarse sand or the gravelly or extremely gravelly analogs of these textures
- Content of gravel—3 to 50 percent

354B—Hononegah loamy sand, 1 to 6 percent slopes

Setting

Landform: Stream terraces, outwash plains, and lake plains
Position on the landform: Summits and backslopes

Map Unit Composition

Hononegah and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have less sand and more clay in the subsoil
- Soils that have slopes of less than 1 percent or more than 6 percent
- Soils that have less gravel in the lower one-half of the profile
- Soils that have a lighter colored surface layer

Dissimilar soils:
- The somewhat poorly drained Darroch, Kane, and Watseka soils on footslopes

Properties and Qualities of the Hononegah Soil

Parent material: Eolian deposits and/or outwash
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Rapid
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 2.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: 4s
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

354D—Hononegah loamy sand, 6 to 12 percent slopes

Setting

Landform: Outwash plains, stream terraces, and lake plains
Position on the landform: Backslopes

Map Unit Composition

Hononegah and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have less sand and more clay in the subsoil
- Soils that have slopes of less than 6 percent or more than 12 percent
- Soils that have less gravel in the lower one-half of the profile
- Soils that have a lighter colored surface layer

Dissimilar soils:
- The somewhat poorly drained Darroch, Kane, and Watseka soils on footslopes

Properties and Qualities of the Hononegah Soil

Parent material: Eolian deposits and/or outwash
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Rapid
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 2.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: 6s
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Kane Series

Drainage class: Somewhat poorly drained
Landform: Outwash plains and stream terraces
Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Slope range: 0 to 2 percent
Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Kane silt loam, 0 to 2 percent slopes; at an elevation of 613 feet; 1,700 feet south and 60 feet west of the northeast corner of sec. 33, T. 34 N., R. 8 E.; Grundy County, Illinois; USGS Minooka topographic quadrangle; lat. 41 degrees 23 minutes 02 seconds N. and long. 88 degrees 18 minutes 32 seconds W., NAD 27; UTM Zone 16, Easting 0390559, Northing 4572840, NAD 83:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

A—7 to 11 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; neutral; clear smooth boundary.

Bt1—11 to 15 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

Bt2—15 to 20 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; firm; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

2Bt3—20 to 26 inches; yellowish brown (10YR 5/4) clay loam; moderate fine subangular blocky structure; firm; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; many fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

2Bt4—26 to 34 inches; yellowish brown (10YR 5/6) clay loam; moderate medium subangular blocky structure; firm; common distinct brown (7.5YR 4/4) clay films on vertical faces of peds; many medium faint yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; many fine distinct brown (10YR 5/3) iron depletions in the matrix; 3 percent gravel; neutral; gradual smooth boundary.

3C—34 to 65 inches; 60 percent yellowish brown (10YR 5/4) and 40 percent light gray (10YR 7/2) gravelly coarse sand; single grain; loose; 22 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to sandy and gravelly glaciofluvial deposits: 20 to 40 inches
Depth to carbonates: 20 to 40 inches
Depth to the base of soil development: 20 to 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Bt or 2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—silty clay loam, clay loam, loam, or sandy loam
Content of gravel—less than 15 percent

3C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand

343A—Kane silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits and footslopes

Map Unit Composition

Kane and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have less sand and more silt in the subsoil
- Soils that have sandy and gravelly deposits beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have a thinner subsurface layer

Dissimilar soils:
- The well drained Warsaw soils on summits
- The poorly drained Will soils on toeslopes

Properties and Qualities of the Kane Soil

Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2s
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Kankakee Series

Drainage class: Well drained
Landform: Outwash plains and stream terraces
Parent material: Loamy outwash and the underlying cobbly outwash
Slope range: 2 to 4 percent
Taxonomic classification: Loamy-skeletal, mixed, superactive, mesic Typic Hapludolls

Typical Pedon

Kankakee fine sandy loam, 0 to 2 percent slopes; at an elevation of 635 feet; 1,660 feet north and 216 feet east of the southwest corner of sec. 36, T. 31 N., R. 10 E.; Kankakee County, Illinois; USGS Herscher topographic quadrangle; lat. 41 degrees 07 minutes 21 seconds N. and long. 88 degrees 01 minute 44 seconds W., NAD 27; UTM Zone 16, Easting 0413625, Northing 4552870, NAD 83:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) fine sandy loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; many very fine roots; neutral; abrupt smooth boundary.

A—7 to 10 inches; very dark grayish brown (10YR 3/2) fine sandy loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; many very fine roots; moderately acid; clear smooth boundary.

AB—10 to 14 inches; dark brown (10YR 3/3) fine sandy loam, brown (10YR 5/3) dry; moderate fine and medium subangular blocky structure; friable; many very fine and fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bt1—14 to 22 inches; yellowish brown (10YR 5/4) sandy clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; common distinct dark brown (10YR 3/3) organic coatings on faces of peds; many distinct brown (10YR 4/3) clay films on faces of peds; 3 percent gravel; slightly acid; gradual wavy boundary.

2Bt2—22 to 27 inches; dark yellowish brown (10YR 4/4) very cobbly loam; weak fine subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; 25 percent cobbles and 15 percent gravel; neutral; gradual wavy boundary.

2C—27 to 60 inches; dark yellowish brown (10YR 4/4) very cobbly loam; massive; friable; common very fine and fine roots; common fine distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 40 percent cobbles and 20 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to cobbly outwash: 10 to 30 inches
Depth to the base of soil development: 20 to 45 inches

Ap, A, or AB horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—fine sandy loam

Bt or Bw horizon:
Hue—10YR
Value—4 to 6
Chroma—3 to 8
Texture—loam, sandy loam, clay loam, or sandy clay loam
Content of cobbles—0 to 15 percent

2Bt or 2Bw horizon:
Hue—10YR
Value—4 to 6
Chroma—3 to 8
Texture—the very cobbly or cobbly analogs of loam or sandy loam
Content of cobbles—15 to 60 percent

2C horizon:
Hue—10YR
Value—4 to 6
Chroma—3 to 8
Texture—the extremely cobbly, very cobbly, or cobbly analogs of loam or sandy loam
Content of cobbles—20 to 70 percent

494B—Kankakee fine sandy loam, 2 to 4 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Map Unit Composition

Kankakee and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 2 percent
- Soils that have more cobbles in the upper part of the profile
- Soils that have less sand and more silt in the upper part of the profile

Dissimilar soils:
- The poorly drained Gilford and Will soils on toeslopes

Properties and Qualities of the Kankakee Soil

Parent material: Loamy outwash and the underlying cobbly outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

830—Landfills

This map unit consists of garbage and other refuse and rubble from the demolition of buildings and pavement. The material is typically covered by a layer of compacted earth. Some of the landfills are active, but some have been abandoned.

Map Unit Composition

Landfills: 90 percent
Dissimilar components: 10 percent

Components of Minor Extent

Dissimilar components:
- The well drained, loamy Orthents on summits and backslopes

Lawson Series

Drainage class: Somewhat poorly drained
Landform: Flood plains
Parent material: Alluvium
Slope range: 0 to 2 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls

Typical Pedon

Lawson silt loam, 0 to 2 percent slopes, frequently flooded; at an elevation of 490 feet; 1,460 feet north and 2,440 feet east of the southwest corner of sec. 9, T. 33 N., R. 7 E.; Grundy County, Illinois; USGS Morris topographic quadrangle; lat. 41 degrees 20 minutes 48 seconds N. and long. 88 degrees 25 minutes 56 seconds W., NAD 27; UTM Zone 16, Easting 0380192, Northing 4578238, NAD 83:

Ap—0 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; slightly alkaline; gradual smooth boundary.
A1—14 to 26 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; slightly alkaline; gradual smooth boundary.
A2—26 to 33 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; friable; slightly alkaline; gradual smooth boundary.
Cg1—33 to 60 inches; dark grayish brown (10YR 4/2) silty clay loam; massive; friable; few fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; slightly alkaline; gradual smooth boundary.
Cg2—60 to 80 inches; 80 percent gray (10YR 6/1) and 20 percent dark gray (10YR 4/1), stratified loam and silt loam; massive; friable; common fine and medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

Cg or C horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 to 3
Texture—silt loam, silty clay loam, or loam; stratified in some pedons

3451A—Lawson silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Lawson and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that are overlain by light-colored recent deposits
- Soils that have a thinner surface soil
- Soils that have less silt and more clay in the upper one-half of the profile
- Soils that have more gravel in the lower part of the profile
- Soils that have carbonates within a depth of 60 inches

Dissimilar soils:
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the Lawson Soil

Parent material: Alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding (frequency, months): Frequent, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

8451A—Lawson silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Lawson and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that are overlain by light-colored recent deposits
- Soils that have a thinner surface soil
- Soils that have less silt and more clay in the upper one-half of the profile
- Soils that have more gravel in the lower part of the profile
- Soils that have carbonates within a depth of 60 inches

Dissimilar soils:
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the Lawson Soil

Parent material: Alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding (frequency, months): Occasional, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Lenzburg Series

Drainage class: Well drained
Landform: Spoil banks, reclaimed land, and ground moraines
Parent material: Mine spoil or earthy fill
Slope range: 7 to 60 percent
Taxonomic classification: Fine-loamy, mixed, active, calcareous, mesic Haplic Udarents

Typical Pedon

Lenzburg silty clay loam, 20 to 60 percent slopes; at an elevation of 535 feet; 1,245 feet north and 225 feet west of the southeast corner of sec. 26, T. 34 N., R. 7 E.; Grundy County, Illinois; USGS Lisbon topographic quadrangle; lat. 41 degrees 23 minutes 27 seconds N. and long. 88 degrees 23 minutes 05 seconds W., NAD 27; UTM Zone 16, Easting 0384226, Northing 4583073, NAD 83:

A—0 to 5 inches; very dark grayish brown (10YR 3/2) silty clay loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; friable; common very fine and fine roots; 1 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

AC—5 to 9 inches; dark grayish brown (10YR 4/2) silty clay loam; weak fine subangular blocky structure; friable; common very fine and fine roots; 1 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.

C1—9 to 12 inches; grayish brown (2.5Y 5/2) silt loam; massive; common very fine and fine roots; 1 percent gravel; strongly effervescent; moderately alkaline; clear smooth boundary.

C2—12 to 29 inches; 80 percent grayish brown (2.5Y 5/2) and 20 percent dark grayish brown (2.5Y 4/2) silt loam; massive; friable; common very fine and fine roots; few dark gray (2.5Y 4/1) soil fragments throughout; few distinct very dark gray (2.5Y 4/1) organic coatings on faces of soil fragments; few fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in pore linings; 1 percent gravel and 7 percent siltstone fragments; very strongly effervescent; moderately alkaline; gradual wavy boundary.

C3—29 to 60 inches; 45 percent grayish brown (2.5Y 5/2), 45 percent dark grayish brown (2.5Y 4/2), and 10 percent dark gray (2.5Y 4/1) silt loam; massive; friable; many fine and very fine roots; common prominent yellowish brown (10YR 5/8) masses of iron accumulation in pore linings; 11 percent shale fragments; slightly effervescent; slightly alkaline.

Range in Characteristics

A horizon:

Hue—10YR or 2.5Y
Value—2 to 5
Chroma—1 to 4
Texture—silty clay loam
Content of rock fragments—less than 15 percent

C horizon:

Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay loam, silt loam, loam, or clay loam or the gravelly analogs of these textures
Content of rock fragments—less than 25 percent

871D—Lenzburg silty clay loam, 7 to 20 percent slopes

Setting

Landform: Spoil banks, ground moraines, and reclaimed land
Position on the landform: Backslopes and shoulders

Map Unit Composition

Lenzburg and similar soils: 85 percent
Dissimilar components: 15 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 7 percent or more than 20 percent
- Soils that have less sand and more silt in the upper part of the profile
- Soils that have a lower content of rock fragments throughout the profile
- Soils that are not calcareous in the upper part of the profile

Dissimilar components:
- Nearly level to gently sloping areas of natural soils
- Areas of water

Properties and Qualities of the Lenzburg Soil

Parent material: Mine spoil or earthy fill
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

871G—Lenzburg silty clay loam, 20 to 60 percent slopes

Setting

Landform: Reclaimed land, spoil banks, and ground moraines (fig. 6)
Position on the landform: Backslopes

Map Unit Composition

Lenzburg and similar soils: 85 percent
Dissimilar components: 15 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 20 percent or more than 60 percent
- Soils that have less sand and more silt in the upper part of the profile
- Soils that have a lower content of rock fragments throughout the profile
- Soils that are not calcareous in the upper part of the profile

Figure 6.—An area of Lenzburg silty clay loam, 20 to 60 percent slopes. This soil occurs as unreclaimed areas that have been strip mined.

Dissimilar components:
- Strongly sloping areas of natural soils
- Areas of water

Properties and Qualities of the Lenzburg Soil

Parent material: Mine spoil or earthy fill
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Lorenzo Series

Drainage class: Well drained
Landform: Stream terraces and outwash plains
Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Slope range: 2 to 4 percent
Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Typic Argiudolls

Typical Pedon

Lorenzo loam, 2 to 4 percent slopes; at an elevation of 510 feet; 378 feet south and 1,988 feet west of the northeast corner of sec. 35, T. 33 N., R. 5 E.; La Salle County, Illinois; USGS Seneca topographic quadrangle; lat. 41 degrees 17 minutes 44 seconds N. and long. 88 degrees 36 minutes 58 seconds W., NAD 27; UTM Zone 16, Easting 0364686, Northing 4572840, NAD 83:

Ap—0 to 6 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; moderate fine and medium granular structure; friable; neutral; common very fine roots; clear smooth boundary.
AB—6 to 9 inches; dark brown (7.5YR 3/2) loam, brown (7.5YR 5/2) dry; weak medium angular blocky structure; friable; neutral; clear smooth boundary.
Bt1—9 to 16 inches; brown (7.5YR 4/4) clay loam; weak medium and coarse angular blocky structure; firm; common distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds; 3 percent gravel; slightly acid; abrupt smooth boundary.
2Bt2—16 to 18 inches; brown (7.5YR 4/4) gravelly loam; weak coarse subangular blocky structure; very friable; few distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds; 20 percent gravel; slightly alkaline; abrupt smooth boundary.
3C—18 to 60 inches; yellowish brown (10YR 5/4) extremely gravelly sand; single grain; loose; 70 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 6 to 15 inches
Depth to sandy and gravelly glaciofluvial deposits: 12 to 24 inches
Depth to carbonates: 12 to 24 inches
Depth to the base of soil development: 12 to 24 inches

Ap or AB horizon:
Hue—7.5YR or 10YR
Value—2 to 3
Chroma—1 or 2
Texture—loam

Bt or 2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—clay loam, loam, or sandy clay loam or the gravelly analogs of these textures
Content of gravel—2 to 35 percent

2C horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6

Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand
Content of gravel—20 to 75 percent

318B—Lorenzo loam, 2 to 4 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Backslopes and summits

Map Unit Composition

Lorenzo and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a lighter colored surface layer
- Soils that are moderately eroded
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that have sandy and gravelly deposits beginning at a depth of more than 24 inches

Dissimilar soils:
- The somewhat poorly drained Kane soils on summits and footslopes
- The excessively drained Rodman soils on shoulders and backslopes
- The poorly drained Will soils on toeslopes

Properties and Qualities of the Lorenzo Soil

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 4.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3s
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Martinsville Series

Drainage class: Well drained
Landform: Outwash plains and stream terraces

Parent material: Outwash
Slope range: 2 to 12 percent
Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Martinsville loam, 2 to 4 percent slopes; at an elevation of 575 feet; 1,435 feet south and 2,260 feet east of the northwest corner of sec. 31, T. 33 N., R. 10 E.; Will County, Illinois; USGS Symerton topographic quadrangle; lat. 41 degrees 18 minutes 07 seconds N. and long. 88 degrees 07 minutes 26 seconds W., NAD 27; UTM Zone 16, Easting 0405911, Northing 4572887, NAD 83:

A—0 to 7 inches; dark grayish brown (10YR 4/2) loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; many very fine and medium roots; moderately acid; clear smooth boundary.

E—7 to 13 inches; 60 percent brown (10YR 5/3) and 40 percent brown (10YR 4/3) loam, light brownish gray (10YR 6/2) dry; weak thin and medium platy structure parting to weak fine and medium granular; friable; common very fine and medium roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on horizontal faces of peds; strongly acid; clear smooth boundary.

Bt1—13 to 20 inches; yellowish brown (10YR 5/4) loam; weak fine subangular blocky structure; friable; common fine and medium roots; few distinct brown (10YR 4/3) clay films on faces of peds; strongly acid; clear wavy boundary.

Bt2—20 to 27 inches; yellowish brown (10YR 5/4) sandy clay loam; moderate medium subangular blocky structure; friable; few fine and medium roots; few distinct brown (10YR 4/3) clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt3—27 to 38 inches; brown (7.5YR 4/4) sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt4—38 to 48 inches; brown (7.5YR 4/4) sandy clay loam; moderate fine and medium subangular blocky structure; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; strongly acid; clear wavy boundary.

Bt5—48 to 57 inches; brown (7.5YR 4/4) sandy loam; weak medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; strongly acid; gradual wavy boundary.

BCt—57 to 63 inches; brown (7.5YR 5/4) sandy loam; weak fine and medium subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on faces of peds; strongly acid; clear wavy boundary.

C1—63 to 76 inches; 60 percent yellowish brown (10YR 5/4) and 40 percent brown (7.5YR 5/4), stratified loamy sand and sandy loam; massive; very friable; common medium black (10YR 2/1) manganese nodules throughout; moderately acid; gradual wavy boundary.

C2—76 to 80 inches; 50 percent yellowish brown (10YR 5/4) and 50 percent brown (7.5YR 5/4), stratified loamy sand and sandy loam; massive; very friable; common fine strong brown (7.5YR 5/6) iron oxide concretions and common medium black (10YR 2/1) manganese nodules throughout; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid.

Range in Characteristics

Depth to carbonates: More than 40 inches
Depth to the base of soil development: 40 to 70 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4

Chroma—2 or 3
Texture—loam

E horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 4
Texture—loam or sandy loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—clay loam, loam, sandy clay loam, silty clay loam, silt loam, or sandy loam
Content of gravel—less than 10 percent

C horizon:
Hue—10YR
Value—4 to 6
Chroma—3 to 6
Texture—stratified sand to silt loam
Content of gravel—less than 10 percent

570B—Martinsville loam, 2 to 4 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Map Unit Composition

Martinsville and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 2 percent
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have less clay and more sand in the subsoil
- Soils that have a thicker, darker surface layer
- Soils that have less sand and more silt in the upper one-half of the profile

Dissimilar soils:
- The somewhat poorly drained Darroch and Starks soils on summits and footslopes
- The poorly drained Selma soils on toeslopes

Properties and Qualities of the Martinsville Soil

Parent material: Outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate

Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

570C2—Martinsville loam, 4 to 6 percent slopes, eroded

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Shoulders and backslopes

Map Unit Composition

Martinsville and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have less clay and more sand in the subsoil
- Soils that have less sand and more silt in the upper one-half of the profile

Dissimilar soils:
- The somewhat poorly drained Darroch and Starks soils on summits and footslopes
- The poorly drained Selma soils on toeslopes

Properties and Qualities of the Martinsville Soil

Parent material: Outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland
Hydric soil status: Not hydric

570D2—Martinsville loam, 6 to 12 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Backslopes

Map Unit Composition

Martinsville and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 6 percent or more than 12 percent
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have less clay and more sand in the subsoil

Dissimilar soils:
- The somewhat poorly drained Darroch and Starks soils on summits and footslopes
- Soils that are severely eroded

Properties and Qualities of the Martinsville Soil

Parent material: Outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Martinton Series

Drainage class: Somewhat poorly drained
Landform: Lake plains
Parent material: Lacustrine deposits
Slope range: 0 to 4 percent
Taxonomic classification: Fine, illitic, mesic Aquic Argiudolls

Typical Pedon

Martinton silt loam, 0 to 2 percent slopes; at an elevation of 650 feet; 480 feet north and 160 feet west of the southeast corner of sec. 5, T. 27 N., R. 7 E.; Livingston County, Illinois; USGS Forrest North topographic quadrangle; lat. 40 degrees 49 minutes 59 seconds N. and long. 88 degrees 25 minutes 57 seconds W., NAD 27; UTM Zone 16, Easting 0379215, Northing 4521261, NAD 83:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

A—7 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

BA—12 to 19 inches; brown (10YR 4/3) silty clay loam; moderate fine angular blocky structure; friable; few very fine roots; many faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

Btg1—19 to 27 inches; dark grayish brown (10YR 4/2) silty clay; moderate fine prismatic structure parting to moderate fine angular blocky; firm; few very fine roots; common distinct very dark grayish brown (2.5Y 3/2) organo-clay films on faces of peds; few fine black (7.5YR 2.5/1) iron and manganese oxide concretions throughout; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

Btg2—27 to 39 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate fine angular blocky; firm; few very fine roots; common faint very dark grayish brown (2.5Y 3/2) organo-clay films on faces of peds; few black (7.5YR 2.5/1) iron and manganese oxide concretions throughout; many medium distinct light olive brown (2.5Y 5/4) and few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

BCtg—39 to 46 inches; grayish brown (2.5Y 5/2) silt loam; weak medium prismatic structure; friable; few faint dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; very slightly effervescent; slightly alkaline; clear smooth boundary.

Cg—46 to 60 inches; 60 percent grayish brown (2.5Y 5/2) and 40 percent yellowish brown (10YR 5/6), stratified silty clay loam and sandy loam; massive; friable; few fine black (7.5YR 2.5/1) iron and manganese oxide concretions throughout; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to carbonates: 24 to 50 inches
Depth to the base of soil development: 30 to 52 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Btg or Bt horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 or 3
Texture—silty clay loam or silty clay

Cg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silt loam, silty clay loam, silty clay, clay loam, loam, or sandy loam; typically stratified

189A—Martinton silt loam, 0 to 2 percent slopes

Setting

Landform: Lake plains
Position on the landform: Summits and footslopes

Map Unit Composition

Martinton and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have gravel in the lower part of the profile
- Soils that have slopes of more than 2 percent
- Soils that have less clay and more silt in the subsoil
- Soils that do not have a subsurface layer

Dissimilar soils:
- The poorly drained Ashkum and Milford soils on toeslopes

Properties and Qualities of the Martinton Soil

Parent material: Lacustrine deposits
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 5.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w

Prime farmland category: Prime farmland
Hydric soil status: Not hydric

189B—Martinton silt loam, 2 to 4 percent slopes

Setting

Landform: Lake plains
Position on the landform: Backslopes and footslopes

Map Unit Composition

Martinton and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have till in the lower part of the profile
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that have less clay and more silt in the subsoil
- Soils that are moderately eroded

Dissimilar soils:
- The poorly drained Ashkum and Milford soils on toeslopes

Properties and Qualities of the Martinton Soil

Parent material: Lacustrine deposits
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 5.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Milford Series

Drainage class: Poorly drained
Landform: Lake plains
Parent material: Lacustrine deposits
Slope range: 0 to 2 percent
Taxonomic classification: Fine, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Milford silty clay loam, 0 to 2 percent slopes, at an elevation of 643 feet; 1,450 feet north and 70 feet east of the southwest corner of sec. 4, T. 26 N., R. 14 W.; Iroquois County, Illinois; USGS Gilman topographic quadrangle; lat. 40 degrees 45 minutes 25 seconds N. and long. 87 degrees 57 minutes 28 seconds W., NAD 27; UTM Zone 16, Easting 0419150, Northing 4512226, NAD 83:

Ap—0 to 9 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine and fine subangular and angular blocky structure; firm; many fine roots; slightly acid; abrupt smooth boundary.

A—9 to 18 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; moderate and strong very fine subangular blocky structure; firm; common fine roots; slightly acid; clear smooth boundary.

BA—18 to 22 inches; very dark gray (10YR 3/1) silty clay, gray (10YR 5/1) dry; moderate fine and medium angular blocky structure; very firm; common fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; common medium prominent olive brown (2.5Y 4/4) masses of iron accumulation in the matrix; common medium faint dark grayish brown (2.5Y 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bg1—22 to 31 inches; gray (5Y 5/1) silty clay loam; moderate medium and coarse prismatic structure parting to moderate medium and coarse angular and subangular blocky; very firm; common fine roots; many distinct dark gray (5Y 4/1) pressure faces on peds; few fine black (N 2.5/) iron and manganese oxide concretions throughout; many medium prominent dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; many medium faint grayish brown (2.5Y 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bg2—31 to 42 inches; gray (5Y 5/1) clay loam; moderate coarse prismatic structure parting to moderate medium and coarse angular blocky; very firm; few fine roots; common medium prominent dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

Bg3—42 to 50 inches; dark gray (5Y 4/1) silty clay loam stratified with thin bands of clay loam; moderate coarse prismatic structure parting to moderate coarse subangular and angular blocky; firm; few fine roots; many medium prominent dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear wavy boundary.

Cg—50 to 60 inches; gray (5Y 5/1) clay loam stratified with bands of fine sandy loam, silty clay loam, and silty clay; massive; firm; few fine roots; many coarse prominent yellowish brown (10YR 5/4 and 5/8) masses of iron accumulation in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 12 to 24 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 36 to 60 inches

Ap or A horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam or silty clay

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6

Chroma—0 to 2
Texture—silty clay loam, silty clay, or clay loam

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam, clay loam, silt loam, loam, or sandy loam

69A—Milford silty clay loam, 0 to 2 percent slopes

Setting

Landform: Lake plains (fig. 7)
Position on the landform: Toeslopes

Map Unit Composition

Milford and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have till in the lower part of the profile
- Soils that have less clay and more silt in the subsoil
- Soils that do not have a subsurface layer and are lighter colored in the upper part of the subsoil
- Soils that are overlain by light-colored recent deposits

Dissimilar soils:
- The somewhat poorly drained Martinton soils on footslopes and summits
- Very poorly drained organic soils on toeslopes

Properties and Qualities of the Milford Soil

Parent material: Lacustrine deposits
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 6.0 percent
Shrink-swell potential: High
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Figure 7.—A concrete block chute structure in an area of Milford silty clay loam, 0 to 2 percent slopes, helps to control erosion by preventing the formation or advance of gullies.

M-W—Miscellaneous water

This map unit consists of bodies of water used primarily as municipal or agricultural waste treatment lagoons. Included in mapping are established earth berms around the lagoons.

Muskego Series

Drainage class: Very poorly drained
Landform: Ground moraines and depressions
Parent material: Herbaceous organic material over coprogenous material
Slope range: 0 to 2 percent
Taxonomic classification: Coprogenous, euic, mesic Limnic Haplosaprists

Typical Pedon

Muskego muck, in an area of Muskego and Houghton mucks, 0 to 2 percent slopes; at an elevation of 745 feet; 1,950 feet north and 255 feet west of the southeast corner of sec. 15, T. 39 N., R. 10 E.; Du Page County, Illinois; USGS Wheaton topographic quadrangle; lat. 41 degrees 51 minutes 49 seconds N. and long. 88 degrees 04 minutes 23 seconds W., NAD 27; UTM Zone 16, Easting 0410936, Northing 4635193, NAD 83:

Oa1—0 to 5 inches; black (N 2.5/) (broken face and rubbed) sapric material, dark gray (N 4/) dry; less than 5 percent fiber rubbed; weak fine granular structure; friable; many very fine roots; slightly acid; clear smooth boundary.

Oa2—5 to 11 inches; black (N 2.5/) (broken face and rubbed) sapric material; less than 5 percent fiber rubbed; moderate fine subangular blocky structure; friable; common very fine and fine roots; neutral; clear smooth boundary.

Oa3—11 to 22 inches; black (N 2.5/) (broken face and rubbed) sapric material; less than 5 percent fiber rubbed; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; slightly acid; clear wavy boundary.

Oa4—22 to 36 inches; 60 percent black (N 2.5/) and 40 percent dark brown (7.5YR 3/3) (broken face and rubbed) sapric material; 10 percent fiber rubbed; weak thick platy structure; friable; common very fine roots; slightly acid; clear wavy boundary.

Lco1—36 to 47 inches; 90 percent very dark gray (5Y 3/1) and 10 percent dark brown (7.5YR 3/4) coprogenous earth; 5 percent fiber rubbed; very friable; massive; common very fine roots; neutral; gradual wavy boundary.

Lco2—47 to 60 inches; very dark gray (5Y 3/1) coprogenous earth; 5 percent fiber rubbed; very friable; massive; common very fine roots; 4 percent snail shells; neutral.

Range in Characteristics

Depth to coprogenous deposits: 16 to 51 inches

Surface tier:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—muck (sapric material)

Subsurface tier:
Hue—7.5YR, 10YR, or N
Value—2 to 3
Chroma—0 to 3
Texture—muck (sapric material)

Lco horizon:
Hue—10YR, 2.5Y, or 5Y
Value—2 to 4
Chroma—1 to 3
Texture—coprogenous earth

4904A—Muskego and Peotone soils, ponded, 0 to 2 percent slopes

Setting

Landform: Ground moraines and depressions
Position on the landform: Toeslopes

Map Unit Composition

Muskego and similar soils: 0 to 90 percent
Peotone and similar soils: 0 to 90 percent
Dissimilar components: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have coprogenous material beginning at a depth of more than 51 inches
- Soils that are calcareous at or near the surface
- Soils that are overlain by light-colored recent deposits
- Soils that have less clay and more sand or silt in the subsurface layer and subsoil
- Soils that are lighter colored in the upper one-half of the subsoil

Dissimilar components:
- The somewhat poorly drained Elliott and Martinton soils on summits and footslopes
- Bodies of water

Properties and Qualities of the Muskego Soil

Parent material: Herbaceous organic material over coprogenic material
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 19.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 60.0 to 90.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): At the surface to 0.5 foot below the surface, all year
Ponding (depth, months): At the surface to 1.0 foot above the surface, all year
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Properties and Qualities of the Peotone Soil

Parent material: Colluvium
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 5.0 to 7.0 percent
Shrink-swell potential: High
Apparent seasonal high water table (depth, months): At the surface to 0.5 foot below the surface, all year
Ponding (depth, months): At the surface to 1.0 foot above the surface, all year
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Muskego—7w; Peotone—7w
Prime farmland category: Not prime farmland
Hydric soil status: Muskego—hydric; Peotone—hydric

Nappanee Series

Drainage class: Somewhat poorly drained
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 0 to 4 percent
Taxonomic classification: Fine, illitic, mesic Aeric Epiaqualfs

Typical Pedon

Nappanee silt loam, 2 to 4 percent slopes; at an elevation of 665 feet; 1,220 feet south and 500 feet east of the northwest corner of sec. 10, T. 44 N., R. 11 E.; Lake County, Illinois; USGS Libertyville topographic quadrangle; lat. 42 degrees 18 minutes 35 seconds N. and long. 87 degrees 56 minutes 33 seconds W., NAD 27; UTM Zone 16, Easting 0422327, Northing 4684589, NAD 83:

A—0 to 4 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 6/1) dry; weak very fine and fine granular structure; friable; many very fine and fine roots; neutral; abrupt smooth boundary.

E—4 to 9 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak thick platy structure; friable; many very fine and fine roots; neutral; clear smooth boundary.

Bt1—9 to 19 inches; dark grayish brown (10YR 4/2) silty clay; moderate fine and medium subangular blocky structure; firm; common very fine roots; common prominent very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; common fine and medium prominent dark yellowish brown (10YR 4/6) weakly cemented iron oxide concretions throughout; common fine black (10YR 2/1) strongly cemented manganese oxide nodules throughout; 1 percent gravel; slightly alkaline; clear smooth boundary.

Bt2—19 to 23 inches; brown (10YR 4/3) silty clay; moderate medium subangular blocky structure; firm; common very fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine distinct gray (10YR 5/1) iron depletions in the matrix; 3 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

Bt3—23 to 28 inches; brown (10YR 5/3) silty clay; weak medium prismatic structure parting to moderate medium subangular blocky; very firm; common very fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common medium faint grayish brown (10YR 5/2) iron depletions in the matrix; 3 percent gravel; slightly effervescent; moderately alkaline; gradual smooth boundary.

Btk1—28 to 36 inches; brown (10YR 5/3) silty clay; weak medium prismatic structure parting to weak medium subangular blocky; very firm; common very fine roots; common distinct dark grayish brown (2.5Y 4/2) and grayish brown (2.5Y 5/2) clay films on faces of peds and in pores; common distinct dark brown (7.5YR 3/2) organo-clay films on surfaces along pores; many fine and medium pale yellow (2.5Y 8/2) carbonate concretions throughout; common medium and coarse prominent strong brown (7.5YR 5/6) and common medium and coarse faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; common medium faint grayish brown (10YR 5/2) iron depletions in the matrix; 2 percent gravel; strongly effervescent; moderately alkaline; gradual smooth boundary.

Btk2—36 to 46 inches; yellowish brown (10YR 5/4) silty clay; weak medium prismatic structure parting to weak coarse subangular blocky; very firm; common very fine roots; common prominent pale yellow (2.5Y 8/2) carbonate coatings on horizontal faces of peds; many prominent dark gray (2.5Y 4/1) and gray (2.5Y 5/1) clay films on faces of peds; common prominent dark brown (7.5YR 3/2) organo-clay films on surfaces along pores; common fine and medium prominent strong brown (7.5YR 5/8) weakly cemented iron oxide concretions throughout; few fine black (7.5YR 2.5/1) strongly cemented manganese oxide concretions throughout; common fine and medium pale yellow (2.5Y 8/2) carbonate concretions throughout; common fine and medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; 2 percent gravel; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cd—46 to 60 inches; yellowish brown (10YR 5/4) silty clay loam; massive; very firm; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine black (7.5YR 2.5/1) strongly cemented manganese oxide concretions throughout; common medium pale yellow (2.5Y 8/2) carbonate concretions throughout; 2 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: Less than 20 inches
Depth to carbonates: 18 to 40 inches
Depth to the base of soil development: 24 to 60 inches

A or Ap horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam

E horizon:
Hue—10YR
Value—4 or 5
Chroma—1 or 2
Texture—silt loam

Bt or Btk horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay or clay
Content of gravel—less than 5 percent

Cd horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay, clay, or silty clay loam
Content of gravel—less than 5 percent

228A—Nappanee silt loam, 0 to 2 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Summits and footslopes

Map Unit Composition

Nappanee and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a thicker, darker surface layer
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have slopes of more than 2 percent
- Soils that have less clay and more silt in the subsoil

Dissimilar soils:
- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Nappanee Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 24 to 60 inches to dense material
Available water capacity: About 6.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 0.5 foot to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

228B—Nappanee silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and footslopes

Map Unit Composition

Nappanee and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a thicker, darker surface layer
- Soils that have less clay and more silt in the subsoil
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that are moderately eroded
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Nappanee Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 24 to 60 inches to dense material

Available water capacity: About 6.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 0.5 foot to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Oakville Series

Drainage class: Excessively drained
Landform: Outwash plains
Parent material: Eolian deposits
Slope range: 1 to 12 percent
Taxonomic classification: Mixed, mesic Typic Udipsamments

Typical Pedon

Oakville fine sand, 1 to 6 percent slopes; at an elevation of 660 feet; 1,980 feet south and 67 feet east of the northwest corner of sec. 24, T. 30 N., R. 12 W.; Kankakee County, Illinois; USGS St. Anne topographic quadrangle; lat. 41 degrees 04 minutes 28 seconds N. and long. 87 degrees 40 minutes 31 seconds W., NAD 27; UTM Zone 16, Easting 0443262, Northing 4547253, NAD 83:

A—0 to 3 inches; very dark grayish brown (10YR 3/2) fine sand, grayish brown (10YR 5/2) dry; weak fine granular structure; very friable; common fine and very fine roots; very strongly acid; clear smooth boundary.
BE—3 to 7 inches; brown (10YR 4/3) fine sand; weak fine granular structure; very friable; common fine roots; very strongly acid; clear smooth boundary.
Bw—7 to 40 inches; yellowish brown (10YR 5/6) fine sand; weak medium and coarse subangular blocky structure; very friable; few fine and very fine roots; very strongly acid; clear smooth boundary.
C—40 to 65 inches; 60 percent light yellowish brown (10YR 6/4) and 40 percent very pale brown (10YR 7/4) fine sand; single grain; loose; strongly acid.

Range in Characteristics

Depth to the base of soil development: 18 to 65 inches

A or Ap horizon:
Hue—10YR
Value—2 to 4
Chroma—1 to 4
Texture—fine sand

Bw horizon:
Hue—7.5YR or 10YR

Value—4 to 6
Chroma—3 to 8
Texture—fine sand or loamy fine sand

C horizon:
Hue—10YR
Value—4 to 7
Chroma—3 to 6
Texture—fine sand, loamy fine sand, sand, or loamy sand

741B—Oakville fine sand, 1 to 6 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Summits and backslopes

Map Unit Composition

Oakville and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a thicker, darker surface layer
- Soils that have less sand and more clay in the upper part of the profile
- Soils that have slopes of less than 1 percent or more than 6 percent
- Soils that have more rock fragments throughout the profile

Dissimilar soils:
- The somewhat poorly drained Watseka soils on summits and footslopes
- The poorly drained Granby soils on toeslopes

Properties and Qualities of the Oakville Soil

Parent material: Eolian deposits
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Rapid
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 4.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: 4s
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

741D—Oakville fine sand, 6 to 12 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Backslopes

Map Unit Composition

Oakville and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have less sand and more clay in the upper part of the profile
- Soils that have slopes of less than 6 percent or more than 12 percent
- Soils that have more rock fragments throughout the profile
- Soils that are moderately eroded

Dissimilar soils:
- The somewhat poorly drained Watseka soils on summits and footslopes

Properties and Qualities of the Oakville Soil

Parent material: Eolian deposits
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Rapid
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 4.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Very high

Interpretive Groups

Land capability classification: 6s
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

802B—Orthents, loamy, undulating

This map unit consists of areas of disturbed soil material. The soils are fine-loamy, mixed, active, nonacid, mesic Oxyaquic Udorthents. Typically, the surface layer is very dark grayish brown, friable loam about 6 inches thick. The upper part of the underlying material is brown and dark yellowish brown, firm clay loam and loam. The lower part to a depth of 60 inches or more is mottled yellowish brown and brown, firm loam.

Setting

Landform: Areas of leveled land and fill on ground moraines and outwash plains
Position on the landform: Summits and backslopes

Map Unit Composition

Orthents, loamy, and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have less sand and more silt
- Soils that have more gravel in the lower one-half of the profile
- Soils that have a seasonal high water table within a depth of 3.5 feet
- Soils that have carbonates at or near the surface

Dissimilar soils:
- The poorly drained Drummer and Elpaso soils on toeslopes

Properties and Qualities of the Loamy Orthents

Parent material: Earthy fill
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 3.5 to 5.0 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

802D—Orthents, loamy, rolling

This map unit consists of areas of disturbed soil material. The soils are fine-loamy, mixed, active, nonacid, mesic Oxyaquic Udorthents. Typically, the surface layer is very dark grayish brown, friable loam about 6 inches thick. The upper part of the underlying material is brown and dark yellowish brown, firm clay loam and loam. The lower part to a depth of 60 inches or more is mottled yellowish brown and brown, firm loam.

Setting

Landform: Areas of fill on outwash plains and ground moraines
Position on the landform: Backslopes

Map Unit Composition

Orthents, loamy, and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 6 percent
- Soils that have more gravel in the lower one-half of the profile
- Soils that have a seasonal high water table within a depth of 3.5 feet
- Soils that have carbonates at or near the surface

Dissimilar soils:
- The poorly drained Drummer and Elpaso soils on toeslopes

Properties and Qualities of the Loamy Orthents

Parent material: Earthy fill
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 3.5 to 5.0 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Ozaukee Series

Drainage class: Moderately well drained
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 2 to 30 percent
Taxonomic classification: Fine, illitic, mesic Oxyaquic Hapludalfs

Typical Pedon

Ozaukee silt loam, 2 to 4 percent slopes; at an elevation of 780 feet; 2,540 feet north and 2,200 feet east of the southwest corner of sec. 31, T. 39 N., R. 10 E.; Du Page County, Illinois; USGS Naperville topographic quadrangle; lat. 41 degrees 49 minutes 14 seconds N. and long. 88 degrees 08 minutes 18 seconds W., NAD 27; UTM Zone 16, Easting 0405455, Northing 4630483, NAD 83:

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam, yellowish brown (10YR 5/4) dry; moderate very fine and fine granular structure; friable; many very fine and fine roots; neutral; clear smooth boundary.

BE—4 to 10 inches; brown (10YR 4/3) silt loam; weak thick platy structure parting to moderate fine subangular blocky; friable; many very fine roots; few distinct dark

grayish brown (10YR 4/2) coatings on faces of peds; moderately acid; clear smooth boundary.

2Bt1—10 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; friable; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; many distinct brown (10YR 4/3) clay films on faces of peds; 1 percent gravel; slightly acid; abrupt smooth boundary.

2Bt2—16 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films and brown (10YR 4/3) clay films on faces of peds; common fine strong brown (7.5YR 5/8) very weakly cemented iron oxide concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 5 percent gravel; neutral; clear smooth boundary.

2Bt3—21 to 27 inches; light olive brown (2.5Y 5/3) silty clay loam; weak fine prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine strong brown (7.5YR 5/8) very weakly cemented iron oxide concretions throughout; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 8 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2Bt4—27 to 33 inches; light olive brown (2.5Y 5/3) silty clay loam; weak fine prismatic structure parting to moderate medium subangular blocky; firm; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine strong brown (7.5YR 5/8) very weakly cemented iron oxide concretions throughout; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concentrations throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 8 percent gravel; strongly effervescent; moderately alkaline; clear smooth boundary.

2BCt—33 to 39 inches; light olive brown (2.5Y 5/3) silty clay loam; weak fine and medium subangular blocky structure; firm; common very fine roots; few distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine strong brown (7.5YR 5/8) very weakly cemented iron oxide concretions throughout; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concentrations throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 6 percent gravel; strongly effervescent; moderately alkaline; abrupt smooth boundary.

2Cd—39 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; few very fine roots; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; many medium white (10YR 8/1) carbonate concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 6 percent gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: Less than 18 inches
Depth to carbonates: 15 to 40 inches
Depth to the base of soil development: 20 to 45 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 3
Texture—silt loam or silty clay loam

E horizon (where present):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam

2Bt horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam, silty clay, or clay
Content of gravel—1 to 10 percent

2Cd horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—2 to 4
Texture—silty clay loam or clay loam
Content of gravel—3 to 15 percent

530B—Ozaukee silt loam, 2 to 4 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes and summits

Map Unit Composition

Ozaukee and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have less clay and more sand or silt in the subsoil
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have less silt and more sand in the lower part of the profile
- Soils that have a thicker, darker surface layer

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Ozaukee Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 20 to 45 inches to dense material
Available water capacity: About 8.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

530C2—Ozaukee silt loam, 4 to 6 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Ozaukee and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have less clay and more sand or silt in the subsoil
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have less silt and more sand in the lower part of the profile
- Soils that are slightly eroded

Dissimilar soils:
- The nearly level, somewhat poorly drained Beecher and Blount soils on summits and footslopes
- The calcareous, moderately well drained Chatsworth soils on backslopes
- The poorly drained Ashkum soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Ozaukee Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 20 to 45 inches to dense material
Available water capacity: About 7.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April

Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

530C3—Ozaukee silty clay loam, 4 to 6 percent slopes, severely eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Ozaukee and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have less clay and more sand or silt in the subsoil
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have less silt and more sand in the lower part of the profile

Dissimilar soils:
- The nearly level, somewhat poorly drained Beecher and Blount soils on summits and footslopes
- The calcareous, moderately well drained Chatsworth soils on backslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Ozaukee Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 20 to 45 inches to dense material
Available water capacity: About 6.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None

Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

530D2—Ozaukee silt loam, 6 to 12 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes

Map Unit Composition

Ozaukee and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have less clay and more sand or silt in the subsoil
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have slopes of less than 6 percent or more than 12 percent
- Soils that have less silt and more sand in the lower part of the profile

Dissimilar soils:
- The calcareous, moderately well drained Chatsworth soils on backslopes
- The somewhat poorly drained Beecher and Blount soils on footslopes
- The poorly drained Ashkum soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Ozaukee Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 20 to 45 inches to dense material
Available water capacity: About 7.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High

Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

530D3—Ozaukee silty clay loam, 6 to 12 percent slopes, severely eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes

Map Unit Composition

Ozaukee and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have less clay and more sand or silt in the subsoil
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have slopes of less than 6 percent or more than 12 percent
- Soils that have less silt and more sand in the lower part of the profile

Dissimilar soils:
- The calcareous, moderately well drained Chatsworth soils on backslopes
- The somewhat poorly drained Beecher and Blount soils on footslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Ozaukee Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 20 to 45 inches to dense material
Available water capacity: About 6.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

530E2—Ozaukee silt loam, 12 to 20 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes

Map Unit Composition

Ozaukee and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have less clay and more sand or silt in the subsoil
- Soils that have slopes of less than 12 percent or more than 20 percent
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have less silt and more sand in the lower part of the profile

Dissimilar soils:
- The calcareous, moderately well drained Chatsworth soils on backslopes
- The somewhat poorly drained Beecher and Blount soils on footslopes
- Soils that are severely eroded

Properties and Qualities of the Ozaukee Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 20 to 45 inches to dense material
Available water capacity: About 7.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

530F—Ozaukee silt loam, 20 to 30 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes

Map Unit Composition

Ozaukee and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have slopes of less than 20 percent or more than 30 percent
- Soils that have less clay and more sand or silt in the subsoil
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have less silt and more sand in the lower part of the profile

Dissimilar soils:
- The calcareous, moderately well drained Chatsworth soils on backslopes
- The somewhat poorly drained Beecher and Blount soils on footslopes

Properties and Qualities of the Ozaukee Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 20 to 45 inches to dense material
Available water capacity: About 7.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Papineau Series

Drainage class: Somewhat poorly drained
Landform: Ground moraines and lake plains
Parent material: Outwash and the underlying till or lacustrine deposits
Slope range: 0 to 2 percent
Taxonomic classification: Fine-loamy over clayey, mixed, active, mesic Aquic Argiudolls

Typical Pedon

Papineau sandy loam, 0 to 2 percent slopes; at an elevation of 552 feet; 1,935 feet north and 1,935 feet east of the southwest corner of sec. 33, T. 33 N., R. 8 E.; Grundy County, Illinois; USGS Coal City topographic quadrangle; lat. 41 degrees 17 minutes 33 seconds N. and long. 88 degrees 19 minutes 00 seconds W., NAD 27; UTM Zone 16, Easting 0389736, Northing 4572062, NAD 83:

Ap—0 to 10 inches; black (10YR 2/1) sandy loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; slightly acid; clear smooth boundary.

A—10 to 13 inches; very dark gray (10YR 3/1) sandy clay loam, gray (10YR 5/1) dry; moderate fine subangular blocky structure; friable; few very fine roots; few fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

BA—13 to 17 inches; dark grayish brown (10YR 4/2) sandy clay loam; moderate fine subangular blocky structure; firm; few very fine roots; few fine faint brown (10YR 4/3) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

Btg1—17 to 24 inches; grayish brown (2.5Y 5/2) sandy clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common fine prominent brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

Btg2—24 to 32 inches; grayish brown (2.5Y 5/2) sandy clay loam; moderate medium subangular blocky structure; firm; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; many fine prominent brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; neutral; abrupt smooth boundary.

2BCg—32 to 41 inches; gray (5Y 5/1) clay; weak medium prismatic structure; very firm; many coarse prominent light olive brown (2.5Y 5/4) and common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly effervescent; moderately alkaline; gradual smooth boundary.

2Cdg—41 to 60 inches; gray (5Y 5/1) clay; massive; very firm; many coarse prominent light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to till or lacustrine deposits: 25 to 40 inches
Thickness of the mollic epipedon: 10 to 18 inches
Depth to carbonates: 30 to 46 inches
Depth to the base of soil development: 36 to 48 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—sandy loam, loam, or sandy clay loam

Bt or Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 or 3
Texture—sandy clay loam, clay loam, or loam

2Btg or 2BCg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6

Chroma—1 or 2
Texture—silty clay or clay

2Cdg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay or clay

42A—Papineau sandy loam, 0 to 2 percent slopes

Setting

Landform: Lake plains and ground moraines
Position on the landform: Footslopes and summits

Map Unit Composition

Papineau and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have less clay and more sand in the upper one-half of the profile
- Soils that have less clay and more silt in the lower one-half of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have clayey lacustrine material or till beginning at a depth of less than 25 inches or more than 40 inches

Dissimilar soils:
- The poorly drained Bryce and Selma soils on toeslopes

Properties and Qualities of the Papineau Soil

Parent material: Outwash and the underlying till or lacustrine deposits
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 36 to 48 inches to dense material
Available water capacity: About 7.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: High
Perched seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Peotone Series

Drainage class: Very poorly drained
Landform: Ground moraines and depressions
Parent material: Colluvium
Slope range: 0 to 2 percent
Taxonomic classification: Fine, smectitic, mesic Cumulic Vertic Endoaquolls

Typical Pedon

Peotone silty clay loam, 0 to 2 percent slopes; at an elevation of 707 feet; 315 feet south and 2,233 feet east of the northwest corner of sec. 21, T. 29 N., R. 9 E.; Ford County, Illinois; USGS Cabery topographic quadrangle; lat. 40 degrees 58 minutes 49 seconds N. and long. 88 degrees 12 minutes 00 seconds W., NAD 27; UTM Zone 16, Easting 0399043, Northing 4537265, NAD 83:

Ap—0 to 7 inches; black (N 2.5/) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.
A—7 to 13 inches; black (N 2.5/) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.
Bg1—13 to 27 inches; black (N 2.5/) silty clay loam, dark gray (10YR 4/1) dry; moderate medium angular blocky structure; friable; common very fine roots; neutral; clear smooth boundary.
Bg2—27 to 41 inches; dark gray (10YR 4/1) silty clay; moderate fine prismatic structure; firm; common very fine roots; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; slightly alkaline; clear smooth boundary.
Bg3—41 to 50 inches; dark gray (10YR 4/1) silty clay; moderate medium prismatic structure; firm; few very fine roots; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; slightly alkaline; clear smooth boundary.
Cg—50 to 60 inches; dark gray (10YR 4/1) silty clay loam; massive; firm; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to carbonates: More than 30 inches
Depth to the base of soil development: 38 to 60 inches

Ap or A horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay loam

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 6
Chroma—0 to 2
Texture—silty clay loam or silty clay

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam, silt loam, or silty clay

330A—Peotone silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Toeslopes

Map Unit Composition

Peotone and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that are overlain by light-colored recent deposits
- Soils that have less clay and more silt in the subsurface layer and subsoil
- Soils that are lighter colored in the upper one-half of the subsoil

Dissimilar soils:
- The somewhat poorly drained Elliott soils on summits and footslopes
- Very poorly drained organic soils on toeslopes

Properties and Qualities of the Peotone Soil

Parent material: Colluvium
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 5.0 to 7.0 percent
Shrink-swell potential: High
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through June
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through June
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

4904A—Muskego and Peotone soils, ponded, 0 to 2 percent slopes

Setting

Landform: Ground moraines and depressions
Position on the landform: Toeslopes

Map Unit Composition

Muskego and similar soils: 0 to 90 percent
Peotone and similar soils: 0 to 90 percent
Dissimilar components: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have coprogenous material beginning at a depth of more than 51 inches
- Soils that are calcareous at or near the surface
- Soils that are overlain by light-colored recent deposits
- Soils that have less clay and more sand or silt in the subsurface layer and subsoil
- Soils that are lighter colored in the upper one-half of the subsoil

Dissimilar components:
- The somewhat poorly drained Elliott and Martinton soils on summits and footslopes
- Bodies of water

Properties and Qualities of the Muskego Soil

Parent material: Herbaceous organic material over coprogenic material
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 19.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 60.0 to 90.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): At the surface to 0.5 foot below the surface, all year
Ponding (depth, months): At the surface to 1.0 foot above the surface, all year
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Properties and Qualities of the Peotone Soil

Parent material: Colluvium
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 5.0 to 7.0 percent
Shrink-swell potential: High
Apparent seasonal high water table (depth, months): At the surface to 0.5 foot below the surface, all year

Ponding (depth, months): At the surface to 1.0 foot above the surface, all year
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: Muskego—7w; Peotone—7w
Prime farmland category: Not prime farmland
Hydric soil status: Muskego—hydric; Peotone—hydric

863—Pits, clay

This map unit consists of excavated areas of shale from which clayey soil material has been removed. The pits have nearly level and gently sloping floors and very steep to nearly vertical sidewalls. Some pits are active, and others have been abandoned. Some contain water. Some of the larger abandoned pits are used as recreational areas.

Map Unit Composition

Pits, clay: 97 percent
Dissimilar components: 3 percent

Components of Minor Extent

Dissimilar components:
- The well drained, loamy Orthents on summits and backslopes
- Bodies of water

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland
Hydric soil status: Not applicable

865—Pits, gravel

This map unit consists of nearly level and gently sloping areas from which gravel has been extracted. The pits have nearly vertical sidewalls. Some pits are active, and others have been abandoned. Some contain water (fig. 8).

Map Unit Composition

Pits, gravel: 92 percent
Dissimilar components: 8 percent

Components of Minor Extent

Dissimilar components:
- The poorly drained Drummer soils on toeslopes
- The well drained, loamy Orthents on summits and backslopes
- Bodies of water

Interpretive Groups

Land capability classification: None assigned

Figure 8.—In this area of map unit 865, gravel is being mined for use as construction material.

Prime farmland category: Not prime farmland
Hydric soil status: Not applicable

Proctor Series

Drainage class: Well drained
Landform: Outwash plains and stream terraces
Parent material: Loess over outwash
Slope range: 0 to 5 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Proctor silt loam, 2 to 5 percent slopes; at an elevation of 705 feet; 204 feet north and 2,460 feet west of the southeast corner of sec. 3, T. 11 N., R. 6 E.; Peoria County, Illinois; USGS Princeville, Illinois, topographic quadrangle; lat. 40 degrees 57 minutes 37 seconds N. and long. 89 degrees 48 minutes 07 seconds W., NAD 27; UTM Zone 16, 0264189 Easting, 4538133 Northing, NAD 83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common very fine roots; moderately acid; clear smooth boundary.

A—8 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

Bt1—11 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine subangular blocky structure; friable; common very fine roots; common distinct

very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—16 to 23 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt3—23 to 28 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt4—28 to 33 inches; yellowish brown (10YR 5/4) loam; moderate medium subangular blocky structure; friable; few very fine roots; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt5—33 to 46 inches; strong brown (7.5YR 5/6), stratified loam and sandy loam; weak coarse subangular blocky structure; very friable; few very fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds; slightly acid; gradual smooth boundary.

2C—46 to 60 inches; strong brown (7.5YR 5/6), stratified sandy loam and loamy sand; massive; very friable; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess: 20 to 40 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 40 to 65 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—loam, silt loam, sandy loam, clay loam, or sandy clay loam; stratified in some pedons
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—loam, silt loam, or sandy loam with strata of loamy sand
Content of gravel—less than 15 percent

148A—Proctor silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Map Unit Composition

Proctor and similar soils: 85 percent
Dissimilar soils: 15 percent

Components of Minor Extent

Similar soils:
- Soils that have more gravel in the lower part of the profile
- Soils that have slopes of more than 2 percent
- Soils that have till in the lower part of the profile
- Soils that have outwash beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The somewhat poorly drained Brenton soils on footslopes
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Proctor Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

148B—Proctor silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits and shoulders

Map Unit Composition

Proctor and similar soils: 85 percent
Dissimilar soils: 15 percent

Components of Minor Extent

Similar soils:
- Soils that have more gravel in the lower part of the profile
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that have till in the lower part of the profile
- Soils that have outwash beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The somewhat poorly drained Brenton soils on footslopes
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Proctor Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Reddick Series

Drainage class: Poorly drained
Landform: Ground moraines and lake plains
Parent material: Outwash and the underlying till or lacustrine deposits
Slope range: 0 to 2 percent
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Reddick clay loam, 0 to 2 percent slopes; at an elevation of 657 feet; 2,616 feet south and 27 feet east of the northwest corner of sec. 34, T. 30 N., R. 9 E.; Kankakee County, Illinois; USGS Buckingham topographic quadrangle; lat. 41 degrees 01 minute 57 seconds N. and long. 88 degrees 11 minutes 25 seconds W., NAD 27; UTM Zone 16, Easting 0399930, Northing 4543058, NAD 83:

Ap—0 to 10 inches; black (10YR 2/1) clay loam, dark gray (10YR 4/1) dry; moderate fine and very fine granular structure; friable; slightly alkaline; abrupt smooth boundary.

A—10 to 13 inches; very dark gray (10YR 3/1) clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; slightly alkaline; clear smooth boundary.

Bg—13 to 19 inches; dark gray (10YR 4/1) clay loam; weak fine prismatic structure parting to moderate very fine subangular blocky; firm; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Btg1—19 to 25 inches; gray (5Y 5/1) clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; firm; common faint dark gray (10YR 4/1) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; many medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly alkaline; clear smooth boundary.

Btg2—25 to 32 inches; gray (10YR 5/1) clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; firm; few faint dark gray (10YR 4/1) clay films faces of peds; many fine and medium prominent light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; 2 percent gravel; slightly alkaline; abrupt smooth boundary.

2Btg3—32 to 47 inches; gray (5Y 6/1) silty clay loam; moderate medium prismatic structure parting to weak medium and coarse subangular blocky; firm; few faint gray (5Y 5/1) clay films on vertical faces of peds; many medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common medium faint light gray (5Y 7/1) iron depletions in the matrix; 3 percent gravel; slightly effervescent; moderately alkaline; gradual wavy boundary.

2Cg—47 to 60 inches; 70 percent gray (5Y 6/1) and 30 percent light gray (5Y 7/1) silty clay loam; many medium prominent yellowish brown (10YR 5/6 and 5/8) masses of iron accumulation in the matrix; massive; firm; 4 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to till or lacustrine deposits: 30 to 50 inches
Depth to carbonates: 24 to 53 inches
Depth to the base of soil development: 35 to 55 inches

Ap or A horizon:
Hue—10YR or N
Value—2 to 3
Chroma—0 to 2
Texture—clay loam

Bg or Btg horizon:
Hue—2.5Y or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—clay loam, silty clay loam, or loam
Content of gravel—less than 5 percent

2Bg or 2Btg horizon:
Hue—2.5Y or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam or silty clay
Content of gravel—less than 10 percent

2Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6

Texture—silty clay loam or silty clay
Content of gravel—less than 15 percent

594A—Reddick clay loam, 0 to 2 percent slopes

Setting

Landform: Lake plains and ground moraines
Position on the landform: Toeslopes

Map Unit Composition

Reddick and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a thicker surface layer and are darker in the upper part of the subsoil
- Soils that have less sand and more silt in the upper part of the profile
- Soils that have less clay and more sand or silt in the lower part of the profile
- Soils that have till beginning at a depth of less than 30 inches or more than 50 inches
- Soils that are overlain by light-colored recent deposits

Dissimilar soils:
- The somewhat poorly drained Andres soils on summits and footslopes

Properties and Qualities of the Reddick Soil

Parent material: Outwash and the underlying till or lacustrine deposits
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 6.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Ridgeville Series

Drainage class: Somewhat poorly drained
Landform: Stream terraces and outwash plains

Parent material: Eolian deposits and/or outwash
Slope range: 0 to 2 percent
Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Ridgeville fine sandy loam, 0 to 2 percent slopes; at an elevation of 653 feet; 2,084 feet south and 30 feet east of the northwest corner of sec. 19, T. 26 N., R. 12 W.; Iroquois County, Illinois; USGS Woodworth topographic quadrangle; lat. 40 degrees 43 minutes 22 seconds N. and long. 87 degrees 45 minutes 55 seconds W., NAD 27; UTM Zone 16, Easting 0435373, Northing 4508268, NAD 83:

Ap—0 to 8 inches; very dark brown (10YR 2/2) fine sandy loam, dark grayish brown (10YR 4/2) dry; weak fine and medium granular structure; very friable; slightly acid; gradual smooth boundary.

A—8 to 16 inches; very dark gray (10YR 3/1) fine sandy loam, dark grayish brown (10YR 4/2) dry; weak fine and medium granular structure; very friable; moderately acid; clear wavy boundary.

BA—16 to 25 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium granular structure in the upper 4 inches grading to weak very fine and fine subangular blocky in the lower part; friable; common fine faint brown (10YR 5/3) masses of iron and dark gray (10YR 4/1) iron depletions in the matrix; moderately acid; clear smooth boundary.

Bt1—25 to 32 inches; grayish brown (10YR 5/2) sandy clay loam; moderate fine and medium subangular blocky structure; firm; few distinct gray (10YR 5/1) clay films on faces of peds; few fine dark brown (7.5YR 3/2) iron and manganese oxide concretions throughout; many fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Bt2—32 to 40 inches; grayish brown (10YR 5/2) fine sandy loam; weak medium subangular blocky structure; friable; common distinct gray (10YR 5/1) clay films on faces of peds; many fine dark brown (7.5YR 3/2) iron and manganese oxide concretions throughout; many medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; slightly acid; clear wavy boundary.

BC—40 to 47 inches; yellowish brown (10YR 5/8) loamy fine sand; weak medium subangular blocky structure; very friable; few fine dark brown (7.5YR 3/2) iron and manganese oxide concretions throughout; many medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; neutral; clear wavy boundary.

Cg—47 to 60 inches; light brownish gray (10YR 6/2) fine sand; single grain; loose; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Depth to the base of soil development: 35 to 55 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—fine sandy loam

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—loam, sandy clay loam, or fine sandy loam

Cg or C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—2 to 8
Texture—fine sand, sand, loamy fine sand, or sandy loam
Content of gravel—less than 7 percent

151A—Ridgeville fine sandy loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits and footslopes

Map Unit Composition

Ridgeville and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have less sand and more clay in the subsoil
- Soils that have more gravel in the lower part of the profile
- Soils that do not have a subsurface layer

Dissimilar soils:
- The somewhat excessively drained Ade soils on backslopes and summits
- The poorly drained Gilford soils on toeslopes

Properties and Qualities of the Ridgeville Soil

Parent material: Eolian deposits and/or outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Apparent seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 2s
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Roby Series

Drainage class: Somewhat poorly drained
Landform: Outwash plains and stream terraces
Parent material: Outwash
Slope range: 0 to 2 percent
Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Aquic Hapludalfs

Typical Pedon

Roby fine sandy loam, 0 to 2 percent slopes; at an elevation of 543 feet; 1,152 feet south and 2,079 feet east of the northwest corner of sec. 30, T. 33 N., R. 8 E.; Grundy County, Illinois; USGS Coal City topographic quadrangle; lat. 41 degrees 18 minutes 44 seconds N. and long. 88 degrees 21 minutes 18 seconds W., NAD 27; UTM Zone 16, Easting 0386575, Northing 4574307, NAD 83:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) fine sandy loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; very friable; moderately acid; abrupt smooth boundary.

E—6 to 10 inches; pale brown (10YR 6/3) loamy fine sand; weak medium platy structure; very friable; many dark grayish brown (10YR 4/2) coatings on faces of peds; few medium and fine distinct very dark gray (10YR 3/1) iron and manganese oxide accumulations on faces of peds; moderately acid; abrupt smooth boundary.

BE—10 to 15 inches; pale brown (10YR 6/3) loamy fine sand; weak medium subangular blocky structure; very friable; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Btg1—15 to 25 inches; light brownish gray (10YR 6/2) fine sandy loam; weak medium subangular blocky structure; very friable; few faint grayish brown (10YR 5/2) clay films on faces of peds; many medium and fine prominent yellowish red (5YR 4/6) weakly cemented iron and manganese oxide nodules throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; abrupt smooth boundary.

Btg2—25 to 32 inches; light brownish gray (10YR 6/2) fine sandy loam; weak medium subangular blocky structure; very friable; few faint grayish brown (10YR 5/2) clay films on faces of peds and coating sand grains; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Cg—32 to 60 inches; stratified light brownish gray (10YR 6/2) loamy fine sand and yellowish brown (10YR 5/8) and strong brown (7.5YR 5/6) fine sandy loam; single grain in the loamy fine sand and massive in the fine sandy loam; loose in the loamy fine sand and very friable in the fine sandy loam; few fine prominent dark brown (7.5YR 3/2) masses of iron and manganese in the matrix; moderately acid.

Range in Characteristics

Depth to the base of soil development: 30 to 60 inches

Ap or A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—fine sandy loam

E horizon:
Hue—10YR
Value—4 to 6

Chroma—3 or 4
Texture—loamy fine sand or fine sandy loam

Btg or Bt horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 6
Texture—fine sandy loam, sandy loam, or loam

Cg horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—2 to 8
Texture—stratified fine sand to fine sandy loam
Content of gravel—less than 7 percent

184A—Roby fine sandy loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Footslopes and summits

Map Unit Composition

Roby and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have more gravel in the lower part of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have carbonates in the lower part of the profile
- Soils that have a thicker, darker surface layer
- Soils that have less clay and more sand in the subsoil

Dissimilar soils:
- The poorly drained Gilford soils on toeslopes

Properties and Qualities of the Roby Soil

Parent material: Outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid or rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Low
Apparent seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 2s
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Rockton Series

Drainage class: Well drained
Landform: Ground moraines and outwash plains
Parent material: Drift and residuum over dolostone and/or limestone
Slope range: 0 to 4 percent
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Rockton silt loam, 2 to 4 percent slopes; at an elevation of 645 feet; 2,130 feet north and 1,050 feet west of the southeast corner of sec. 27, T. 31 N., R. 12 E.; Kankakee County, Illinois; USGS Bradley topographic quadrangle; lat. 41 degrees 08 minutes 22 seconds N. and long. 87 degrees 49 minutes 16 seconds W., NAD 83; UTM Zone 16, Easting 0431097, Northing 4554571, NAD 83:

Ap—0 to 6 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

A—6 to 11 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine and medium granular structure; friable; common very fine roots; neutral; clear smooth boundary.

Bt1—11 to 17 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine subangular blocky structure; friable; common very fine roots; few faint brown (10YR 4/3) clay films on faces of peds and in pores; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine reddish brown (5YR 4/4) iron concretions throughout; 2 percent gravel; neutral; clear wavy boundary.

Bt2—17 to 21 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; common faint brown (10YR 4/3) clay films on faces of peds and in pores; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common fine reddish brown (5YR 4/4) iron concretions throughout; 4 percent gravel; neutral; clear wavy boundary.

Bt3—21 to 27 inches; dark yellowish brown (10YR 4/4) sandy clay loam; moderate fine and medium subangular blocky structure; common very fine roots; common faint brown (10YR 4/3) clay films on faces of peds; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common fine and medium reddish brown (5YR 4/4) iron concretions throughout; 6 percent gravel; neutral; clear wavy boundary.

2Bt4—27 to 31 inches; brown (7.5YR 4/4) clay loam; weak medium and coarse subangular blocky structure; friable; common very fine roots; few faint brown (7.5YR 4/3) clay films on faces of peds; few distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds; common medium reddish brown (5YR 4/4) iron concretions throughout; common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; 8 percent gravel; 5 percent cobbles; slightly alkaline; clear irregular boundary.

2R—31 inches; very pale brown (10YR 7/4) dolomite bedrock.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches

Depth to lithic contact: 20 to 40 inches
Depth to the base of soil development: 20 to 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—loam, clay loam, or sandy clay loam
Content of gravel—less than 8 percent

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 or 4
Texture—clay loam, clay, or silty clay loam
Content of gravel—less than 12 percent
Content of cobbles—less than 6 percent

503A—Rockton silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and ground moraines
Position on the landform: Summits

Map Unit Composition

Rockton and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of more than 2 percent
- Soils that have bedrock beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have sandstone or shale bedrock
- Soils that have less sand and more silt in the profile

Dissimilar soils:
- The poorly drained Faxon soils on toeslopes

Properties and Qualities of the Rockton Soil

Parent material: Drift and residuum over dolostone and/or limestone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Available water capacity: About 6.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: High
Ponding: None

Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2s
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

503B—Rockton silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines and outwash plains
Position on the landform: Backslopes and summits

Map Unit Composition

Rockton and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that have bedrock beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have sandstone or shale bedrock
- Soils that have less sand and more silt in the profile

Dissimilar soils:
- The poorly drained Faxon soils on toeslopes

Properties and Qualities of the Rockton Soil

Parent material: Drift and residuum over dolostone and/or limestone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Available water capacity: About 5.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: High
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Rodman Series

Drainage class: Excessively drained
Landform: Outwash plains and end moraines
Parent material: Sandy and gravelly glaciofluvial deposits
Slope range: 4 to 6 percent
Taxonomic classification: Sandy-skeletal, mixed, mesic Typic Hapludolls

Typical Pedon

Rodman gravelly loam, 6 to 12 percent slopes, eroded; at an elevation of 530 feet; 2,120 feet south and 740 feet west of the northeast corner of sec. 9, T. 33 N., R. 9 E.; Will County, Illinois; USGS Wilmington topographic quadrangle; lat. 41 degrees 21 minutes 25 seconds N. and long. 88 degrees 11 minutes 43 seconds W., NAD 27; UTM Zone 16, Easting 0400011, Northing 4579069, NAD 83:

A—0 to 8 inches; very dark grayish brown (10YR 3/2) gravelly loam, grayish brown (10YR 5/2) dry; weak fine granular structure; very friable; many very fine and common fine roots; 15 percent gravel; neutral; clear smooth boundary.

Bw—8 to 12 inches; dark brown (10YR 3/3) gravelly loam; weak fine subangular blocky structure parting to weak fine granular; very friable; common very fine roots; few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; 15 percent gravel; slightly alkaline; abrupt smooth boundary.

C1—12 to 18 inches; brown (10YR 4/3) very gravelly loamy sand; single grain; loose; common very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on sand grains and pebbles; 40 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.

C2—18 to 60 inches; dark yellowish brown (10YR 4/4) very gravelly sand; single grain; loose; few very fine roots; 45 percent gravel and 15 percent cobbles; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 6 to 15 inches
Depth to carbonates: 10 to 15 inches
Depth to the base of soil development: 10 to 15 inches

A or Ap horizon:
Hue—7.5YR or 10YR
Value—2 to 3
Chroma—1 or 2
Texture—gravelly loam
Content of gravel—15 to 25 percent

Bw horizon:
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—2 or 3
Texture—loam, sandy loam, gravelly loam, or gravelly sandy loam
Content of gravel—12 to 35 percent

C horizon:
Hue—10YR

Value—3 to 5
Chroma—1 to 4
Texture—the very gravelly or extremely gravelly analogs of loamy sand, sand, loamy coarse sand, or coarse sand
Content of gravel—35 to 70 percent

93C2—Rodman gravelly loam, 4 to 6 percent slopes, eroded

Setting

Landform: End moraines and outwash plains
Position on the landform: Backslopes and shoulders

Map Unit Composition

Rodman and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 4 percent
- Soils that have less gravel and more cobbles
- Soils that have carbonates at or near the surface
- Soils that have a lighter colored surface layer

Dissimilar soils:
- The somewhat poorly drained Kane soils on footslopes and summits
- The poorly drained Will soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Rodman Soil

Parent material: Sandy and gravelly glaciofluvial deposits
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 3.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Low
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Very low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Negligible

Interpretive Groups

Land capability classification: 4s
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Ross Series

Drainage class: Well drained
Landform: Flood plains
Parent material: Loamy alluvium
Slope range: 0 to 2 percent
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls

Typical Pedon

Ross loam, 0 to 2 percent slopes, frequently flooded; at an elevation of 584 feet; 2,030 feet east and 550 feet north of the southwest corner of sec. 7, T. 30 N., R. 4 E.; Livingston County, Illinois; USGS Streator South topographic quadrangle; lat. 41 degrees 04 minutes 40 seconds N. and long. 88 degrees 48 minutes 21 seconds W., NAD 27; UTM Zone 16, Easting 0348290, Northing 4548953, NAD 83:

Ap—0 to 8 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.

A1—8 to 14 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; weak fine subangular blocky structure parting to moderate medium granular; friable; few very fine roots; neutral; clear smooth boundary.

A2—14 to 23 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; friable; few very fine roots; many faint very dark brown (10YR 2/2) organic coatings on faces of peds; slightly acid; clear smooth boundary.

BA—23 to 33 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; weak fine prismatic structure parting to weak medium angular blocky; friable; few very fine roots; common faint very dark brown (10YR 2/2) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bw1—33 to 41 inches; brown (10YR 4/3) loam; weak fine prismatic structure; friable; few very fine roots; common faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bw2—41 to 54 inches; brown (10YR 4/3) loam; weak medium prismatic structure; friable; few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine black (7.5YR 2.5/1) iron and manganese oxide accumulations throughout; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

C—54 to 60 inches; dark yellowish brown (10YR 4/4) sandy loam; massive; friable; few fine black (7.5YR 2.5/1) iron and manganese oxide accumulations throughout; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 40 inches
Depth to the base of soil development: 27 to 56 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—loam

Bw horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture—loam, silt loam, or silty clay loam

C horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 4
Texture—sandy loam, loam, or silt loam or stratified with these textures
Content of gravel—less than 15 percent

3073A—Ross loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Ross and similar soils: 91 percent
Dissimilar soils: 9 percent

Components of Minor Extent

Similar soils:
- Soils that have less clay and more sand in the upper one-half of the profile
- Soils that have a thinner surface soil
- Soils that have less sand and more silt and clay in the upper one-half of the profile
- Soils that have more gravel in the lower part of the profile
- Soils that have a seasonal high water table within a depth of 4 feet

Dissimilar soils:
- The poorly drained Comfrey soils on flood plains

Properties and Qualities of the Ross Soil

Parent material: Loamy alluvium
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Low
Apparent seasonal high water table (depth, months): 4.0 to 6.0 feet, February through April
Ponding: None
Flooding (frequency, months): Frequent, November through June
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

8073A—Ross loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Ross and similar soils: 95 percent
Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:
- Soils that have less clay and more sand in the upper one-half of the profile
- Soils that have a thinner surface soil
- Soils that have less sand and more silt or clay in the upper one-half of the profile
- Soils that have more gravel in the lower part of the profile
- Soils that have a seasonal high water table within a depth of 4 feet

Dissimilar soils:
- The poorly drained Comfrey and Sawmill soils on flood plains

Properties and Qualities of the Ross Soil

Parent material: Loamy alluvium
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): 4.0 to 6.0 feet, February through April
Ponding: None
Flooding (frequency, months): Occasional, November through June
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Sawmill Series

Drainage class: Poorly drained and very poorly drained
Landform: Flood plains
Parent material: Alluvium
Slope range: 0 to 2 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls

Typical Pedon

Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded; at an elevation of 636 feet; 1,350 feet south and 140 feet west of the northeast corner of sec. 31, T. 30 N., R. 3 E.; Livingston County, Illinois; USGS Long Point topographic quadrangle; lat. 41 degrees 01 minute 36 seconds N. and long. 88 degrees 54 minutes 43 seconds W., NAD 27; UTM Zone 16, Easting 0339248, Northing 4543492, NAD 83:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; few very fine roots; slightly acid; abrupt smooth boundary.

A1—9 to 17 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; few very fine roots; slightly acid; clear smooth boundary.

A2—17 to 24 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to moderate medium granular; friable; few very fine roots; 1 percent gravel; neutral; clear smooth boundary.

A3—24 to 29 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; 1 percent gravel; neutral; clear smooth boundary.

Bg1—29 to 36 inches; dark gray (5Y 4/1) silty clay loam; weak medium prismatic structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; 1 percent gravel; neutral; clear smooth boundary.

Bg2—36 to 41 inches; dark gray (5Y 4/1) silty clay loam; weak medium prismatic structure; friable; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; 1 percent gravel; neutral; clear smooth boundary.

BCg—41 to 48 inches; dark gray (5Y 4/1) silty clay loam; very weak medium prismatic structure; firm; few very fine roots; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; few fine prominent yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; common fine distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; 1 percent gravel; neutral; abrupt smooth boundary.

Cg—48 to 60 inches; 60 percent gray (10YR 5/1) and 40 percent brownish yellow (10YR 6/6) silt loam; massive; firm; few fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; 1 percent gravel; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to carbonates: More than 48 inches
Depth to the base of soil development: 36 to 60 inches

Ap or A horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam or mucky silt loam

Bg or BCg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam, silt loam, or clay loam or stratified with these textures
Content of gravel—less than 10 percent

1107A—Sawmill silty clay loam, undrained, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a thinner surface soil
- Soils that have less clay and more sand or silt in the upper one-half of the profile
- Soils that are overlain by light-colored recent deposits
- Soils that have more gravel in the lower part of the profile

Dissimilar soils:
- Very poorly drained organic soils on flood plains
- Poorly drained, calcareous soils on flood plains
- The somewhat poorly drained Lawson soils on flood plains

Properties and Qualities of the Sawmill Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): At the surface to 0.5 foot below the surface, November through June
Ponding (depth, months): At the surface to 0.5 foot above the surface, November through June

Flooding (frequency, months): Frequent, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 5w
Prime farmland category: Not prime farmland
Hydric soil status: Hydric

3107A—Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a thinner surface soil
- Soils that have less clay and more sand or silt in the upper one-half of the profile
- Soils that are overlain by light-colored recent deposits
- Soils that have more gravel in the lower part of the profile

Dissimilar soils:
- Poorly drained, calcareous soils on flood plains
- The somewhat poorly drained Lawson soils on flood plains

Properties and Qualities of the Sawmill Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding (frequency, months): Frequent, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Hydric

4107A—Sawmill mucky silt loam, ponded, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a thinner surface soil
- Soils that have less clay and more sand or silt in the upper one-half of the profile
- Soils that are overlain by light-colored recent deposits
- Soils that have more gravel in the lower part of the profile

Dissimilar soils:
- The very poorly drained Muskego soils on toeslopes

Properties and Qualities of the Sawmill Soil

Parent material: Alluvium
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 7.0 to 15.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): At the surface to 0.5 foot below the surface, all year
Ponding (depth, months): At the surface to 1.0 foot above the surface, all year
Flooding (frequency, months): Frequent, November through June
Potential for frost action: High
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 7w
Prime farmland category: Not prime farmland
Hydric soil status: Hydric

8107A—Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a thinner surface soil
- Soils that have less clay and more sand or silt in the upper one-half of the profile
- Soils that are overlain by light-colored recent deposits
- Soils that have more gravel in the lower part of the profile

Dissimilar soils:
- Poorly drained, calcareous soils on flood plains
- The somewhat poorly drained Lawson soils on flood plains

Properties and Qualities of the Sawmill Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 7.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding (frequency, months): Occasional, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Selma Series

Drainage class: Poorly drained
Landform: Outwash plains and stream terraces
Parent material: Outwash
Slope range: 0 to 2 percent
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Selma loam, 0 to 2 percent slopes; at an elevation of 656 feet; 52 feet south and 160 feet west of the northeast corner of sec. 18, T. 28 N., R. 10 E.; Iroquois County, Illinois; USGS Piper City NE topographic quadrangle; lat. 40 degrees 54 minutes 36 seconds N. and long. 88 degrees 06 minutes 44 seconds W., NAD 27; UTM Zone 16, Easting 0406337, Northing 4529366, NAD 83:

Ap—0 to 6 inches; black (10YR 2/1) loam, dark gray (10YR 4/1) dry; weak fine and medium granular structure; friable; common very fine and fine roots; neutral; gradual smooth boundary.

A—6 to 13 inches; black (10YR 2/1) clay loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure; friable; common fine roots; neutral; gradual wavy boundary.

Btg1—13 to 19 inches; dark grayish brown (2.5Y 4/2) clay loam; moderate fine and medium subangular blocky structure; friable; common fine roots; many prominent very dark gray (2.5Y 3/1) organo-clay films on faces of peds and in pores; few fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; neutral; gradual wavy boundary.

Btg2—19 to 28 inches; grayish brown (2.5Y 5/2) loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; many prominent dark gray (2.5Y 4/1) clay films on faces of peds; few fine distinct light olive brown (2.5Y 5/4) iron and manganese nodules throughout; common medium distinct olive brown (2.5Y 4/4) masses of iron accumulation in the matrix; slightly alkaline; gradual wavy boundary.

Btg3—28 to 39 inches; grayish brown (2.5Y 5/2) loam; weak fine and medium subangular blocky structure; friable; common fine roots; few distinct dark gray (2.5Y 4/1) clay films on faces of peds; black (N 2.5/) krotovina at a depth of 30 to 39 inches; few fine prominent dark yellowish brown (10YR 4/6) iron and manganese nodules throughout; few fine prominent light olive brown (2.5Y 5/6) masses of iron accumulation in the matrix; slightly alkaline; gradual wavy boundary.

BCtg—39 to 44 inches; grayish brown (2.5Y 5/2) loam; weak medium subangular blocky structure; friable; few very fine roots; few faint dark gray (2.5Y 4/1) clay films on faces of peds; few fine prominent dark yellowish brown (10YR 4/6) iron and manganese nodules throughout; few fine prominent light olive brown (2.5Y 5/6) masses of iron accumulation in the matrix; strongly effervescent; slightly alkaline; gradual wavy boundary.

Cg1—44 to 54 inches; 55 percent dark gray (2.5Y 4/1), 35 percent gray (2.5Y 5/1), and 10 percent light yellowish brown (2.5Y 6/4), stratified sandy loam and loamy sand; massive in the sandy loam and single grain in the loamy sand; friable in the sandy loam and loose in the loamy sand; few very fine roots; very strongly effervescent; moderately alkaline; gradual wavy boundary.

Cg2—54 to 80 inches; 45 percent dark gray (2.5Y 4/1), 45 percent gray (2.5Y 5/1), and 10 percent light olive brown (2.5Y 5/6), stratified silt loam, sandy loam, and loamy sand; massive in the silt loam and sandy loam and single grain in the loamy sand; friable; few very fine roots; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to carbonates: More than 30 inches
Depth to the base of soil development: 35 to 55 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3

Chroma—1 or 2
Texture—loam or clay loam

Bg, Btg, or BCg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—loam, clay loam, silty clay loam, or sandy loam
Content of gravel—less than 10 percent

Cg or C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—stratified sandy loam, loam, silt loam, or loamy sand
Content of gravel—less than 15 percent

125A—Selma loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Toeslopes

Map Unit Composition

Selma and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have more gravel in the lower part of the profile
- Soils that have till in the lower part of the profile
- Soils that have less sand and more silt in the upper two-thirds of the profile
- Soils that are overlain by light-colored recent deposits

Dissimilar soils:
- The somewhat poorly drained Darroch soils on footslopes and summits
- Very poorly drained organic soils on toeslopes

Properties and Qualities of the Selma Soil

Parent material: Outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 6.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible

Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Shadeland Series

Drainage class: Somewhat poorly drained
Landform: Stream terraces and outwash plains
Parent material: Thin mantle of loess or other silty material and the underlying outwash and residuum over shale and/or sandstone bedrock
Slope range: 0 to 2 percent
Taxonomic classification: Fine-loamy, mixed, active, mesic Aeric Endoaqualfs
Taxadjunct features: The Shadeland soils in this survey area have a thicker and darker surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-loamy, mixed, active, mesic Udollic Endoaqualfs.

Typical Pedon

Shadeland silt loam, 0 to 2 percent slopes; at an elevation of 527 feet; 2,205 feet south and 1,345 feet west of the northeast corner of sec. 8, T. 33 N., R. 8 E.; Grundy County, Illinois; USGS Coal City topographic quadrangle; lat. 41 degrees 21 minutes 10 seconds N. and long. 88 degrees 19 minutes 49 seconds W., NAD 27; UTM Zone 16, Easting 0388721, Northing 4578776, NAD 83:

A—0 to 9 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure parting to weak fine granular; friable; many very fine and fine roots; moderately acid; abrupt smooth boundary.

E—9 to 13 inches; dark grayish brown (10YR 4/2) silt loam; weak thick platy structure; friable; common very fine and fine roots; common distinct very dark brown (10YR 2/2) organic coatings on faces of peds; strongly acid; clear smooth boundary.

BE—13 to 18 inches; brown (10YR 5/3) silt loam; weak thick platy structure parting to weak very fine and fine subangular blocky; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; common fine faint dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; very strongly acid; clear smooth boundary.

Bt—18 to 23 inches; brown (10YR 5/3) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common very fine roots; few distinct brown (7.5YR 5/3) clay films on faces of peds; common fine and medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine faint pinkish gray (7.5YR 6/2) iron depletions in the matrix; very strongly acid; clear smooth boundary.

2Btg1—23 to 29 inches; light brownish gray (10YR 6/2) clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; few distinct brown (7.5YR 5/2) clay films on faces of peds; common medium and coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; very strongly acid; clear smooth boundary.

2Btg2—29 to 36 inches; light brownish gray (10YR 6/2) clay loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; few distinct dark gray (10YR 4/1) clay films on faces of peds and in

pores; few distinct grayish brown (10YR 5/2) clay films on faces of peds; common medium and coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; very strongly acid; clear wavy boundary.

3Cr—36 to 60 inches; 80 percent strong brown (7.5YR 5/6), 15 percent light brownish gray (10YR 6/2), and 5 percent gray (10YR 5/1) sandstone; few very fine roots; very strongly acid.

Range in Characteristics

Thickness of the loess or other silty material: Less than 24 inches
Depth to paralithic contact: 20 to 40 inches
Depth to the base of soil development: 20 to 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

E or BE horizon:
Hue—10YR
Value—4 to 6
Chroma—1 to 3
Texture—silt loam

Bt or 2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam, clay loam, loam, or silt loam

555A—Shadeland silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Footslopes and summits

Map Unit Composition

Shadeland and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have a lighter colored surface layer
- Soils that have a thicker dark surface layer
- Soils that have slopes of more than 2 percent
- Soils that have bedrock beginning at a depth of less than 20 inches or more than 40 inches
- Soils that have less sand and more silt in the subsoil
- Soils that have less clay and more sand in the subsoil

Dissimilar soils:
- The well drained High Gap soils on summits and backslopes
- Soils that are occasionally flooded for brief periods
- The poorly drained Calamine and Bryce, shale substratum, soils on toeslopes

Properties and Qualities of the Shadeland Soil

Parent material: Thin mantle of loess or other silty material and the underlying outwash and residuum over shale and/or sandstone bedrock
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Available water capacity: About 6.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 0.5 foot to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

Sparta Series

Drainage class: Excessively drained
Landform: Outwash plains and stream terraces
Parent material: Eolian deposits and/or outwash
Slope range: 1 to 6 percent
Taxonomic classification: Sandy, mixed, mesic Entic Hapludolls

Typical Pedon

Sparta loamy fine sand, 1 to 6 percent slopes; at an elevation of 690 feet; 600 feet south and 320 feet west of the northeast corner of sec. 17, T. 22 N., R. 11 W.; Vermilion County, Illinois; USGS Bismarck topographic quadrangle; lat. 40 degrees 22 minutes 16 seconds N. and long. 87 degrees 36 minutes 33 seconds W., NAD 27; UTM Zone 16, Easting 0448282, Northing 4469130, NAD 83:

Ap—0 to 13 inches; very dark grayish brown (10YR 3/2) loamy fine sand, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to weak fine granular; very friable; common very fine roots; slightly acid; abrupt smooth boundary.
Bw1—13 to 24 inches; dark yellowish brown (10YR 4/6) loamy fine sand; weak medium subangular blocky structure; very friable; slightly acid; gradual wavy boundary.
Bw2—24 to 42 inches; dark yellowish brown (10YR 4/6) loamy fine sand; weak medium and coarse subangular blocky structure; very friable; slightly acid; gradual wavy boundary.
Bw3—42 to 71 inches; yellowish brown (10YR 5/6) loamy fine sand; weak coarse subangular blocky structure; very friable; neutral; clear wavy boundary.
E and Bt—71 to 80 inches; yellowish brown (10YR 5/6) fine sand (E); single grain; loose; lamellae of dark yellowish brown (10YR 4/4) loamy fine sand (Bt) 1/8 to 1/4

inch thick with a total thickness of less than 4 inches; weak medium subangular blocky structure; very friable; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to lamellae: 45 to 80 inches
Depth to carbonates: More than 80 inches

Ap or A horizon:
Hue—7.5YR or 10YR
Value—2 to 3
Chroma—1 or 2
Texture—loamy fine sand

Bw horizon:
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—3 to 6
Texture—loamy fine sand, loamy sand, or fine sand
Content of gravel—less than 10 percent

E and Bt horizon:
Hue—7.5YR or 10YR
Value—5 or 6 in the E part; 3 to 5 in the Bt part
Chroma—3 to 6
Texture—sand or fine sand in the E part; loamy fine sand, loamy sand, or fine sand in the Bt part
Content of gravel—less than 10 percent

88B—Sparta loamy fine sand, 1 to 6 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Backslopes and summits

Map Unit Composition

Sparta and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have less sand and more clay in the subsoil
- Soils that have slopes of less than 1 percent or more than 6 percent
- Soils that have more than 10 percent gravel in the lower part of the profile
- Soils that have a lighter colored surface layer

Dissimilar soils:
- The somewhat poorly drained Watseka soils on footslopes and summits
- The poorly drained Gilford and Granby soils on toeslopes

Properties and Qualities of the Sparta Soil

Parent material: Eolian deposits and/or outwash
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Rapid

Depth to restrictive feature: More than 80 inches
Available water capacity: About 5.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: 4s
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Starks Series

Drainage class: Somewhat poorly drained
Landform: Outwash plains and stream terraces
Parent material: Loess or other silty material and the underlying outwash
Slope range: 0 to 2 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

Typical Pedon

Starks silt loam, 0 to 2 percent slopes; at an elevation of 610 feet; 30 feet south and 600 feet east of the northwest corner of sec. 33, T. 30 N., R. 4 E.; Livingston County, Illinois; USGS Streator South topographic quadrangle; lat. 41 degrees 01 minute 58 seconds N. and long. 88 degrees 46 minutes 27 seconds W., NAD 27; UTM Zone 16, Easting 0350840, Northing 4543991, NAD 83:

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.

E—10 to 14 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; moderate fine subangular blocky structure; friable; few very fine roots; many distinct white (10YR 8/1) (dry) silt coatings on faces of peds; common fine faint brown (10YR 5/3) masses of iron accumulation in the matrix; neutral; abrupt smooth boundary.

BE—14 to 17 inches; 80 percent brown (10YR 4/3) and 20 percent grayish brown (10YR 5/2) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; many distinct white (10YR 8/1) (dry) silt coatings on faces of peds; common fine faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; neutral; abrupt smooth boundary.

Bt—17 to 21 inches; brown (10YR 4/3) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

Btg1—21 to 25 inches; gray (10YR 5/1) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common faint

dark grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; common fine prominent brown (7.5YR 4/4) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

Btg2—25 to 31 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to moderate fine angular blocky; friable; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly acid; clear smooth boundary.

2Btg3—31 to 43 inches; grayish brown (2.5Y 5/2), stratified silt loam and sandy loam; weak medium prismatic structure parting to weak fine angular blocky; friable; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct black (7.5YR 2.5/1) weakly cemented iron and manganese oxide concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.

2Cg—43 to 60 inches; grayish brown (2.5Y 5/2) sandy loam with thin strata of loamy sand; massive; very friable; many coarse prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral.

Range in Characteristics

Thickness of the loess or other silty material: 24 to 40 inches
Depth to carbonates: 40 to 70 inches
Depth to the base of soil development: 35 to more than 60 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—1 to 3
Texture—silt loam

E horizon:
Hue—10YR
Value—5 or 6
Chroma—2 or 3
Texture—silt loam

Bt and Btg horizons:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay loam

2Btg or 2BCg horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—clay loam, silt loam, or sandy loam; stratified in some pedons
Content of gravel—less than 5 percent

2Cg horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—stratified loamy sand to clay loam
Content of gravel—less than 15 percent

132A—Starks silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Footslopes and summits

Map Unit Composition

Starks and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have more than 15 percent gravel in the lower part of the profile
- Soils that have slopes of more than 2 percent
- Soils that have outwash beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have till in the lower part of the profile
- Soils that have a thicker, darker surface layer

Dissimilar soils:
- The well drained Martinsville soils on backslopes and summits
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Starks Soil

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): 0.5 foot to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

Swygert Series

Drainage class: Somewhat poorly drained
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying lacustrine deposits and till
Slope range: 0 to 6 percent

Taxonomic classification: Fine, mixed, active, mesic Aquic Argiudolls
Taxadjunct features: The Swygert soils in map units 91B2 and 91C2 have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine, mixed, active, mesic Aquollic Hapludalfs.

Typical Pedon

Swygert silty clay loam, 0 to 2 percent slopes; at an elevation of 675 feet; 339 feet south and 66 feet east of the northwest corner of sec. 7, T. 25 N., R. 13 W.; Iroquois County, Illinois; USGS Onarga East topographic quadrangle; lat. 40 degrees 38 minutes 36 seconds N. and long. 87 degrees 53 minutes 04 seconds W., NAD 27; UTM Zone 16, Easting 0425215, Northing 4499540, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine granular structure; friable; many fine roots; slightly acid; abrupt wavy boundary.

A—7 to 12 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak medium angular blocky structure parting to weak fine subangular blocky; friable; many fine roots; common black (N 2.5/) krotovinas; slightly acid; abrupt smooth boundary.

Bt1—12 to 18 inches; very dark grayish brown (10YR 3/2) silty clay, gray (10YR 5/1) dry; moderate fine subangular blocky structure; friable; many fine roots; many distinct black (10YR 2/1) and very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine black (10YR 2/1) iron and manganese oxide concretions throughout; common fine faint brown (10YR 4/3) masses of iron accumulation in the matrix; slightly acid; clear wavy boundary.

Bt2—18 to 26 inches; brown (10YR 4/3) silty clay; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films and dark grayish brown (10YR 4/2) clay films on faces of peds; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine distinct olive gray (5Y 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt3—26 to 31 inches; yellowish brown (10YR 5/4) silty clay; moderate medium prismatic structure parting to weak medium and fine angular blocky; firm; common fine roots; common distinct very dark gray (10YR 3/1) organo-clay films in root channels; common very dark gray (10YR 3/1) krotovinas; common distinct dark gray (10YR 4/1) and gray (10YR 5/1) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine prominent gray (5Y 5/1) iron depletions in the matrix; slightly effervescent (7 percent calcium carbonate equivalent); moderately alkaline; gradual smooth boundary.

2Bt4—31 to 41 inches; light olive brown (2.5Y 5/4) silty clay; moderate medium prismatic structure parting to weak coarse angular blocky; very firm; few fine roots; common prominent very dark gray (10YR 3/1) organo-clay films and gray (5Y 5/1) clay films on faces of peds; common medium prominent gray (5Y 5/1) iron depletions in the matrix; slightly effervescent (16 percent calcium carbonate equivalent); moderately alkaline; gradual smooth boundary.

2Bt5—41 to 51 inches; light olive brown (2.5Y 5/4) silty clay; weak coarse prismatic structure; very firm; few fine roots; common distinct very dark gray (5Y 3/1) organo-clay films in root channels; many distinct dark gray (5Y 4/1) clay films on faces of peds; common fine black (10YR 2/1) iron and manganese oxide concretions throughout; few fine distinct olive (5Y 5/6) and few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common fine

prominent gray (5Y 5/1) iron depletions in the matrix; strongly effervescent (18 percent calcium carbonate equivalent); moderately alkaline; gradual smooth boundary.

2Cd—51 to 60 inches; brown (10YR 5/3) silty clay; massive; very firm; many distinct gray (5Y 6/1) pressure faces; common fine black (10YR 2/1) iron and manganese oxide concretions throughout; few coarse prominent strong brown (7.5YR 5/6 and 5/8) masses of iron accumulation in the matrix; strongly effervescent (19 percent calcium carbonate equivalent); moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 20 inches
Depth to till: Less than 45 inches
Depth to carbonates: 20 to 50 inches
Depth to the base of soil development: 35 to 55 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silty clay loam

Bt or 2Bt horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 6
Texture—silty clay or clay
Content of gravel—less than 8 percent

2Cd horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay, silty clay loam, or clay
Content of gravel—less than 12 percent

91A—Swygert silty clay loam, 0 to 2 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Footslopes and summits

Map Unit Composition

Swygert and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have slopes of more than 2 percent
- Soils that have less clay and more silt in the subsoil
- Soils that have a thinner subsurface layer

Dissimilar soils:
- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Swygert Soil

Parent material: Thin mantle of loess or other silty material and the underlying lacustrine deposits and till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 35 to 55 inches to dense material
Available water capacity: About 7.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: High
Perched seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

91B—Swygert silty clay loam, 2 to 4 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Footslopes and backslopes

Map Unit Composition

Swygert and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 2 percent
- Soils that have less clay and more silt in the subsoil
- Soils that are moderately eroded
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Swygert Soil

Parent material: Thin mantle of loess or other silty material and the underlying lacustrine deposits and till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 35 to 55 inches to dense material
Available water capacity: About 7.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent

Shrink-swell potential: High
Perched seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

91B2—Swygert silty clay loam, 2 to 4 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Footslopes and backslopes

Map Unit Composition

Swygert and similar soils: 94 percent
Dissimilar soils: 6 percent

Components of Minor Extent

Similar soils:
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that have less clay and more silt in the subsoil
- Soils that are slightly eroded
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Swygert Soil

Parent material: Thin mantle of loess or other silty material and the underlying lacustrine deposits and till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 35 to 55 inches to dense material
Available water capacity: About 7.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: High
Perched seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete

Surface runoff class: High
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

91C2—Swygert silty clay loam, 4 to 6 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Swygert and similar soils: 94 percent
Dissimilar soils: 6 percent

Components of Minor Extent

Similar soils:
- Soils that have less clay and more silt in the subsoil
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have carbonates at a depth of less than 20 inches
- Soils that have slopes of less than 4 percent

Dissimilar soils:
- The moderately well drained, calcareous Chatsworth soils on backslopes
- The poorly drained Bryce soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Swygert Soil

Parent material: Thin mantle of loess or other silty material and the underlying lacustrine deposits and till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 35 to 55 inches to dense material
Available water capacity: About 6.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: High
Perched seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Symerton Series

Drainage class: Moderately well drained
Landform: Ground moraines and lake plains
Parent material: Thin mantle of loess or other silty material and the underlying outwash and till
Slope range: 0 to 10 percent
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Oxyaquic Argiudolls
Taxadjunct features: The Symerton soil in map unit 294C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-loamy, mixed, superactive, mesic Mollic Oxyaquic Hapludalf.

Typical Pedon

Symerton silt loam, 2 to 5 percent slopes; at an elevation of 714 feet; 102 feet north and 1,806 feet west of the southeast corner of sec. 33, T. 24 N., R. 12 W.; Iroquois County, Illinois; USGS Hoopeston topographic quadrangle; lat. 40 degrees 29 minutes 17.1 seconds N. and long. 87 degrees 42 minutes 57.9 seconds W., NAD 27; UTM Zone 16, Easting 0439310, Northing 4482181, NAD 83:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, very dark gray (10YR 3/1) dry; weak very fine granular structure; friable; slightly acid; abrupt smooth boundary.

A—10 to 15 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate very fine granular structure; friable; moderately acid; clear smooth boundary.

AB—15 to 19 inches; very dark grayish brown (10YR 3/2) silty clay loam, dark grayish brown (10YR 4/2) dry; moderate very fine granular structure; friable; many distinct black (10YR 2/1) organic coatings on faces of peds; moderately acid; clear smooth boundary.

2Bt1—19 to 25 inches; brown (10YR 4/3) gravelly clay loam; moderate very fine subangular blocky structure; firm; many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide nodules throughout; about 18 percent gravel; moderately acid; clear smooth boundary.

2Bt2—25 to 31 inches; brown (10YR 4/3) gravelly clay loam; moderate fine subangular blocky structure; firm; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide nodules throughout; about 18 percent gravel; neutral; clear smooth boundary.

2Bt3—31 to 35 inches; yellowish brown (10YR 5/4) gravelly loam; weak fine and medium subangular blocky structure; firm; common distinct brown (10YR 4/3) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide nodules throughout; few fine prominent yellowish red (5YR 5/8) masses of iron accumulation in the matrix; about 18 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

3Bt4—35 to 39 inches; brown (10YR 5/3) silt loam; weak medium prismatic structure parting to weak medium subangular blocky; firm; few distinct brown (10YR 4/3) clay films on faces of peds; few fine prominent yellowish red (5YR 5/8) masses of

iron accumulation in the matrix; slightly effervescent; slightly alkaline; clear smooth boundary.

3C—39 to 60 inches; light olive brown (2.5Y 5/4) and light yellowish brown (2.5Y 6/4) silt loam; massive; firm; few fine prominent yellowish red (5YR 4/6) masses of iron accumulation in the matrix; few fine prominent gray (10YR 5/1) iron depletions in the matrix; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 20 inches
Thickness of the loess or other silty material: Less than 24 inches
Depth to till: 22 to 50 inches
Depth to carbonates: 24 to 55 inches
Depth to the base of soil development: 30 to 50 inches

Ap, A, or AB horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam or silty clay loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—clay loam, loam, gravelly clay loam, or gravelly loam
Content of gravel—less than 20 percent

3Bt or 3BC horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam
Content of gravel—less than 7 percent

3C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—3 or 4
Texture—silty clay loam or silt loam
Content of gravel—less than 7 percent

294A—Symerton silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and lake plains
Position on the landform: Summits

Map Unit Composition

Symerton and similar soils: 88 percent
Dissimilar soils: 12 percent

Components of Minor Extent

Similar soils:
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have a thinner surface layer

- Soils that have a seasonal high water table within a depth of 2 feet
- Soils that have slopes of more than 2 percent
- Soils that have till beginning at a depth of less than 22 inches or more than 50 inches

Dissimilar soils:
- The poorly drained Ashkum and Reddick soils on toeslopes

Properties and Qualities of the Symerton Soil

Parent material: Thin mantle of loess or other silty material and the underlying outwash and till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

294B—Symerton silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines and lake plains
Position on the landform: Summits and backslopes

Map Unit Composition

Symerton and similar soils: 88 percent
Dissimilar soils: 12 percent

Components of Minor Extent

Similar soils:
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have till beginning at a depth of less than 22 inches or more than 50 inches
- Soils that are moderately eroded
- Soils that have slopes of less than 2 percent or more than 5 percent

Dissimilar soils:
- The poorly drained Ashkum and Reddick soils on toeslopes

Properties and Qualities of the Symerton Soil

Parent material: Thin mantle of loess or other silty material and the underlying outwash and till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

294C2—Symerton silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Lake plains and ground moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Symerton and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have till beginning at a depth of less than 22 inches or more than 50 inches
- Soils that have slopes of less than 5 percent

Dissimilar soils:
- The poorly drained Ashkum and Reddick soils on toeslopes

Properties and Qualities of the Symerton Soil

Parent material: Thin mantle of loess or other silty material and the underlying outwash and till

Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Titus Series

Drainage class: Poorly drained
Landform: Flood plains
Parent material: Clayey alluvium
Slope range: 0 to 2 percent
Taxonomic classification: Fine, smectitic, mesic Vertic Endoaquolls

Typical Pedon

Titus silty clay loam, 0 to 2 percent slopes, occasionally flooded; at an elevation of 470 feet; 2,650 feet west and 2,150 feet south of the northeast corner of sec. 20, T. 2 N., R. 9 W.; Adams County, Illinois; USGS Lima, Illinois, topographic quadrangle; lat. 40 degrees 08 minutes 25 seconds N. and long. 91 degrees 27 minutes 55 seconds W., NAD 27; UTM Zone 15, Easting 0630724, Northing 4444461, NAD 83:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silty clay loam, dark grayish brown (10YR 4/2) dry; weak fine and medium subangular blocky structure; very firm; few fine roots; neutral; clear smooth boundary.

A—7 to 13 inches; dark olive gray (5Y 3/2) silty clay loam, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure; very firm; few fine roots; few fine prominent dark yellowish brown (10YR 4/4) masses of iron accumulation throughout; neutral; clear smooth boundary.

Bg1—13 to 25 inches; dark gray (2.5Y 4/1) silty clay; weak fine prismatic structure; very firm; few fine roots; many distinct dark olive gray (5Y 3/2) organo-clay films on faces of peds; common fine prominent dark yellowish brown (10YR 4/6) masses of iron accumulation throughout; neutral; clear smooth boundary.

Bg2—25 to 36 inches; dark gray (5Y 4/1) silty clay; weak medium prismatic structure; very firm; few very fine roots; many distinct gray (N 5/) pressure faces on faces of peds; common fine prominent brown (7.5YR 4/4) masses of iron accumulation and few fine distinct black (10YR 2/1) masses of manganese accumulation throughout; neutral; clear smooth boundary.

Bg3—36 to 46 inches; dark gray (5Y 4/1) silty clay; weak medium prismatic structure; very firm; few very fine roots; many distinct gray (N 5/) pressure faces on faces of peds; common fine prominent brown (7.5YR 4/4) masses of iron accumulation and few fine prominent black (10YR 2/1) masses of manganese accumulation throughout; neutral; clear smooth boundary.

Bg4—46 to 55 inches; dark gray (2.5 4/1) silty clay; weak fine prismatic structure; very firm; few very fine roots; many distinct gray (N 5/) pressure faces on faces of peds; few fine prominent dark yellowish brown (10YR 4/6) masses of iron accumulation throughout; neutral; clear smooth boundary.

Cg1—55 to 68 inches; dark gray (5Y 4/1) silty clay loam; massive; very firm; few fine dark yellowish brown (10YR 4/6) masses of iron accumulation throughout; neutral; clear smooth boundary.

Cg2—68 to 80 inches; dark gray (5Y 4/1) silty clay loam; massive; very firm; many fine prominent brown (7.5YR 4/4) masses of iron accumulation and few fine distinct black (10YR 2/1) masses of iron accumulation throughout; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the base of soil development: 35 to 60 inches

Ap or A horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay or silty clay loam
Content of gravel—less than 2 percent

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam, silt loam, or loam
Content of gravel—less than 15 percent

8404A—Titus silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Titus and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have less clay or more clay in the upper one-half of the profile
- Soils that have a thicker surface soil

- Soils that have more gravel in the lower part of the profile
- Soils that have carbonates within a depth of 35 inches
- Soils that are overlain by light-colored recent deposits

Dissimilar soils:

- The somewhat poorly drained Shadeland soils on footslopes and summits
- Soils in undrained areas that are subject to ponding of long duration

Properties and Qualities of the Titus Soil

Parent material: Clayey alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: High
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding (frequency, months): Occasional, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Varna Series

Drainage class: Moderately well drained
Landform: Ground moraines and end moraines
Parent material: Thin mantle of loess or other silty material and the underlying till
Slope range: 2 to 6 percent
Taxonomic classification: Fine, illitic, mesic Oxyaquic Argiudolls
Taxadjunct features: The Varna soils in map units 223B2 and 223C2 have a thinner dark surface layer than is defined as the range for the series, and the Varna soil in map unit 223C3 has a lighter colored surface layer. These differences, however, do not significantly affect the use and management of the soils. The Varna soils in map units 223B2 and 223C2 are classified as fine, illitic, mesic Mollic Oxyaquic Hapludalfs, and the Varna soil in map unit 223C3 is classified as a fine, illitic, mesic Oxyaquic Hapludalf.

Typical Pedon

Varna silt loam, 2 to 4 percent slopes; at an elevation of 722 feet; 35 feet north and 860 feet east of the southwest corner of sec. 6, T. 29 N., R. 11 E.; Kankakee County, Illinois; USGS Herscher topographic quadrangle; lat. 41 degrees 00 minutes 53 seconds N. and long. 88 degrees 00 minutes 49 seconds W.; UTM Zone 16, Easting 0414761, Northing 4540891, NAD 83:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

A—8 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; slightly acid; clear smooth boundary.

2Bt1—12 to 18 inches; brown (10YR 4/3) silty clay loam; moderate very fine subangular blocky structure; firm; many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; 5 percent fine gravel; moderately acid; clear smooth boundary.

2Bt2—18 to 24 inches; dark yellowish brown (10YR 4/4) silty clay; weak fine prismatic structure parting to moderate very fine and fine subangular blocky; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; 5 percent fine gravel; moderately acid; clear smooth boundary.

2Bt3—24 to 30 inches; light olive brown (2.5Y 5/4) silty clay; weak fine prismatic structure parting to moderate fine angular and subangular blocky; firm; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 5 percent fine gravel; neutral; clear wavy boundary.

2Bt4—30 to 42 inches; 60 percent yellowish brown (10YR 5/6) and 40 percent grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium angular and subangular blocky; firm; few distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; 5 percent fine gravel; slightly effervescent; slightly alkaline; gradual smooth boundary.

2BCt—42 to 48 inches; 50 percent yellowish brown (10YR 5/6) and 50 percent gray (5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak medium subangular and angular blocky; firm; few distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; 2 percent fine gravel; slightly effervescent; moderately alkaline; gradual wavy boundary.

2Cd—48 to 60 inches; 90 percent yellowish brown (10YR 5/4 and 5/6) and 10 percent gray (5Y 5/1) silty clay loam; massive; very firm; 5 percent fine gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 16 inches
Thickness of the loess or other silty material: Less than 18 inches
Depth to carbonates: 24 to 42 inches
Depth to the base of soil development: 24 to 60 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam, silty clay, or clay
Content of gravel—less than 10 percent

2Cd horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6

Texture—silty clay loam or clay loam
Content of gravel—less than 10 percent

223B—Varna silt loam, 2 to 4 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes and summits

Map Unit Composition

Varna and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have less clay and more silt in the subsoil
- Soils that have slopes of less than 2 percent or more than 4 percent

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Varna Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 24 to 60 inches to dense material
Available water capacity: About 8.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

223B2—Varna silt loam, 2 to 4 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and summits

Map Unit Composition

Varna and similar soils: 94 percent
Dissimilar soils: 6 percent

Components of Minor Extent

Similar soils:
- Soils that are slightly eroded
- Soils that have a seasonal high water table beginning at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have less clay and more silt in the subsoil
- Soils that have slopes of less than 2 percent or more than 4 percent

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Varna Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 24 to 60 inches to dense material
Available water capacity: About 7.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

223C2—Varna silt loam, 4 to 6 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Varna and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet

- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have less clay and more silt in the subsoil

Dissimilar soils:
- The moderately well drained, calcareous Chatsworth soils on backslopes
- The nearly level, somewhat poorly drained Elliott soils on summits and footslopes
- The poorly drained Ashkum soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Varna Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 24 to 60 inches to dense material
Available water capacity: About 8.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

223C3—Varna silty clay loam, 4 to 6 percent slopes, severely eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Varna and similar soils: 94 percent
Dissimilar soils: 6 percent

Components of Minor Extent

Similar soils:
- Soils that have a seasonal high water table beginning at a depth of more than 3.5 feet
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have less clay and more silt in the subsoil
- Soils that are moderately eroded

Dissimilar soils:
- The moderately well drained, calcareous Chatsworth soils on backslopes

- The nearly level, somewhat poorly drained Elliott soils on summits and footslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Varna Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 18 to 36 inches to dense material
Available water capacity: About 6.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Perched seasonal high water table (depth, months): 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Warsaw Series

Drainage class: Well drained
Landform: Outwash plains and stream terraces
Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits, with or without a thin mantle of loess or other silty material
Slope range: 2 to 6 percent
Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Warsaw soil in map unit 290C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Warsaw silt loam, 0 to 2 percent slopes; at an elevation of 535 feet; 1,800 feet south and 620 feet west of the northeast corner of sec. 9, T. 33 N., R. 9 E.; Will County, Illinois; USGS Wilmington topographic quadrangle; lat. 41 degrees 21 minutes 27 seconds N. and long. 88 degrees 11 minutes 39 seconds W., NAD 27; UTM Zone 16, Easting 0400106, Northing 4579132, NAD 83:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; many very fine roots; 2 percent gravel; slightly acid; clear smooth boundary.

A—7 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine and medium granular structure; friable; many very fine roots; common distinct black (10YR 2/1) organic coatings on faces of peds; 2 percent gravel; slightly acid; clear smooth boundary.

2BA—11 to 17 inches; brown (10YR 4/3) loam; moderate fine subangular blocky structure; friable; many very fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; 5 percent gravel; moderately acid; clear smooth boundary.

2Bt1—17 to 28 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; 5 percent gravel; moderately acid; clear wavy boundary.

3Bt2—28 to 32 inches; dark yellowish brown (10YR 4/4) gravelly sandy clay loam; weak fine and medium subangular blocky structure; friable; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron and manganese oxide concretions throughout; 20 percent gravel; neutral; clear wavy boundary.

3C1—32 to 44 inches; yellowish brown (10YR 5/4) gravelly loamy sand; massive; very friable; few very fine roots; 20 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

3C2—44 to 80 inches; light yellowish brown (10YR 6/4) very gravelly sand; single grain; loose; 40 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 20 inches
Depth to sandy and gravelly glaciofluvial deposits: 24 to 40 inches
Depth to carbonates: 24 to 40 inches
Depth to the base of soil development: 24 to 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or loam

2Bt or 3Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—clay loam, loam, or sandy clay loam or the gravelly analogs of these textures
Content of gravel—0 to 35 percent

3C horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—3 to 6
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand
Content of gravel—15 to 70 percent

290B—Warsaw loam, 2 to 4 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits and backslopes

Map Unit Composition

Warsaw and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have sandy and gravelly deposits beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have carbonates at a depth of less than 24 inches
- Soils that have less clay and more sand or silt in the upper one-half of the profile
- Soils that have bedrock in the lower part of the profile

Dissimilar soils:
- The somewhat poorly drained Kane soils on footslopes and summits
- The poorly drained Will soils on toeslopes

Properties and Qualities of the Warsaw Soil

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

290C2—Warsaw silt loam, 4 to 6 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Shoulders and backslopes

Map Unit Composition

Warsaw and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:
- Soils that have sandy and gravelly deposits beginning at a depth of less than 24 inches or more than 40 inches
- Soils that have carbonates at a depth of less than 24 inches
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The somewhat poorly drained Kane soils on footslopes and summits
- The poorly drained Will soils on toeslopes

Properties and Qualities of the Warsaw Soil

Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 5.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

W—Water

This map unit consists of natural bodies of water, such as ponds, lakes, and rivers.

Watseka Series

Drainage class: Somewhat poorly drained
Landform: Outwash plains and stream terraces
Parent material: Eolian deposits and/or outwash
Slope range: 0 to 2 percent
Taxonomic classification: Sandy, mixed, mesic Aquic Hapludolls

Typical Pedon

Watseka loamy fine sand, 0 to 2 percent slopes; at an elevation of 653 feet; 450 feet south and 55 feet west of the northeast corner of sec. 6, T. 30 N., R. 10 W.; Kankakee County, Illinois; Leesville topographic quadrangle; lat. 41 degrees 07 minutes 14 seconds N. and long. 87 degrees 31 minutes 37 seconds W., NAD 27; UTM Zone 16, Easting 0455761, Northing 4552276, NAD 83:

Ap—0 to 8 inches; black (10YR 2/1) loamy fine sand, dark gray (10YR 4/1) dry; weak medium granular structure; very friable; neutral; abrupt smooth boundary.

A—8 to 10 inches; very dark gray (10YR 3/1) loamy fine sand, gray (10YR 5/1) dry; weak medium granular structure; very friable; slightly acid; clear smooth boundary.

Bw1—10 to 24 inches; dark grayish brown (10YR 4/2) sand; weak coarse subangular blocky structure; very friable; common faint dark gray (10YR 4/1) coatings on faces of peds; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; slightly acid; gradual irregular boundary.

Bw2—24 to 32 inches; light brownish gray (10YR 6/2) fine sand; weak coarse subangular blocky structure; very friable; common coarse dark gray (10YR 4/1) and very dark gray (10YR 3/1) manganese accumulations throughout; moderately acid; clear wavy boundary.

C—32 to 60 inches; light gray (10YR 7/2) fine sand; single grain; loose; moderately acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to carbonates: More than 50 inches
Depth to the base of soil development: 24 to 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—loamy fine sand

Bw or Bg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 7
Chroma—1 to 4
Texture—loamy fine sand, fine sand, or sand
Content of gravel—less than 10 percent

C or Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 7
Chroma—1 to 4
Texture—loamy fine sand, fine sand, or sand
Content of gravel—less than 10 percent

49A—Watseka loamy fine sand, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Footslopes and summits

Map Unit Composition

Watseka and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have a seasonal high water table beginning at a depth of more than 2 feet
- Soils that have more gravel in the lower part of the profile
- Soils that have less sand and more clay in the upper part of the subsoil
- Soils that have a thinner surface layer

Dissimilar soils:
- The somewhat excessively drained Ade and excessively drained Sparta soils on summits and backslopes
- The somewhat poorly drained, moderately permeable to very slowly permeable Papineau soils on footslopes
- The poorly drained Granby soils on toeslopes

Properties and Qualities of the Watseka Soil

Parent material: Eolian deposits and/or outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Rapid
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 5.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Low
Apparent seasonal high water table (depth, months): 1.0 to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: 3s
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Will Series

Drainage class: Poorly drained
Landform: Outwash plains and stream terraces
Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Slope range: 0 to 2 percent
Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Will silty clay loam, 0 to 2 percent slopes; at an elevation of 605 feet; 2,260 feet south and 1,660 feet west of the northeast corner of sec. 14, T. 35 N., R. 9 E.; Will County, Illinois; USGS Plainfield topographic quadrangle; lat. 41 degrees 36 minutes 10 seconds N. and long. 88 degrees 10 minutes 09 seconds W., NAD 27; UTM Zone 16, Easting 0402563, Northing 4606331, NAD 83:

Ap—0 to 6 inches; black (N 2.5/) silty clay loam, very dark gray (10YR 3/1) dry; weak medium and coarse granular structure; friable; common very fine and fine roots; 2 percent gravel; neutral; gradual wavy boundary.

A1—6 to 11 inches; black (N 2.5/) silty clay loam, very dark gray (10YR 3/1) dry; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; 2 percent gravel; neutral; gradual wavy boundary.

A2—11 to 16 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate medium subangular blocky structure; friable; common very fine and fine roots; few fine prominent olive yellow (2.5Y 6/6) weakly cemented iron and manganese oxide nodules throughout; 5 percent gravel; slightly alkaline; gradual smooth boundary.

2Bg—16 to 20 inches; dark grayish brown (2.5Y 4/2) loam; moderate medium subangular blocky structure; friable; common prominent black (10YR 2/1) organic coatings on faces of peds and in pores; few fine prominent yellowish brown (10YR 5/6) weakly cemented iron and manganese oxide nodules throughout; 5 percent gravel; slightly alkaline; gradual wavy boundary.

2BCg—20 to 24 inches; 60 percent dark gray (2.5Y 4/1) and 40 percent dark grayish brown (2.5Y 4/2) loam; weak medium and coarse subangular blocky structure; friable; common distinct black (10YR 2/1) organic coatings on vertical faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron and manganese in the matrix; common medium distinct pale yellow (2.5Y 7/3) carbonate concretions throughout; 9 percent gravel; very slightly effervescent; moderately alkaline; clear smooth boundary.

3Cg—24 to 60 inches; dark gray (2.5Y 4/1) gravelly loamy sand; single grain; loose; common coarse distinct pale yellow (2.5Y 7/3) carbonate concretions throughout; 30 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to sandy and gravelly glaciofluvial deposits: 20 to 40 inches
Depth to carbonates: 20 to 40 inches
Depth to the base of soil development: 24 to 40 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam

Bg or 2Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—clay loam, loam, or silty clay loam
Content of gravel—less than 15 percent

3Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6

Chroma—0 to 8
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand
Content of gravel—30 to 70 percent

329A—Will silty clay loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Toeslopes

Map Unit Composition

Will and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:
- Soils that have sandy and gravelly deposits beginning at a depth of less than 20 inches or more than 40 inches
- Soils that do not have a subsurface layer
- Soils that have less sand and more silt in the upper one-half of the profile

Dissimilar soils:
- The somewhat poorly drained Kane soils on summits and footslopes
- Very poorly drained organic soils on toeslopes

Properties and Qualities of the Will Soil

Parent material: Thin mantle of loess or other silty material and the underlying loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 5.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4.0 to 6.0 percent
Shrink-swell potential: Moderate
Apparent seasonal high water table (depth, months): At the surface to 1.0 foot below the surface, January through May
Ponding (depth, months): At the surface to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of gravel, sand, reclamation material, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses or describe specific management concerns. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the potential of the soils for the use. Terms for limitation classes are *not limited, somewhat limited,* and *very limited*. Terms indicating the potential of the soils for a given use are *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact

on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Soil Series and Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

In 2002, Grundy County had about 212,558 acres of cropland (U.S. Department of Commerce, 2002). The major row crops are corn and soybeans. Wheat is the major small grain crop, and alfalfa is the major forage crop.

The soils in Grundy County have good potential for continued crop production, especially if the latest crop production technology is applied. This soil survey can be used as a guide in applying this technology.

Some of the management concerns affecting cropland and pasture in Grundy County are restricted permeability, water erosion, high pH, wetness, ponding, root-restrictive layers, limited available water capacity, crusting, poor tilth, and excessive permeability.

Restricted permeability in the soil can increase the susceptibility to erosion. As water movement slows within a soil, the chance for runoff increases. The very slowly permeable Nappanee soils, for example, are more susceptible to erosion than the moderately permeable Proctor soils. The hazard of erosion resulting from restricted permeability can be reduced by applying a cropping system that leaves crop residue on the surface after planting, incorporating green manure crops or crop residue into the soil, and using conservation cropping systems.

Restricted permeability can also limit the effectiveness of drainage systems. For example, drainage tiles in areas of the slowly permeable Elliott soils should be more closely spaced than those in areas of the moderately permeable Starks soils.

Water erosion is a potential problem on soils that have slopes of more than 2 percent, such as Swygert, Martinsville, and Proctor soils. It also is a hazard in less sloping areas if the slopes are long and runoff water is concentrated.

Loss of the surface layer through sheet and rill erosion is damaging for several reasons. Soil productivity is reduced as the surface soil is removed and part of the subsoil is incorporated into the plow layer. The subsoil is generally lower in content of plant nutrients and organic matter and higher in content of clay than the surface soil. As the amount of organic matter decreases and the content of clay increases in the plow layer, soil tilth deteriorates, resulting in soil crusting and a reduced rate of water infiltration. Under these conditions, preparing a good seedbed could be difficult. Erosion results in the sedimentation of streams, rivers, road ditches, and lakes. This sedimentation reduces the quality of water for agricultural, municipal, and recreational uses and for fish and wildlife. Removing the sediment generally is expensive. Erosion control helps to minimize this pollution and improves water quality.

Erosion-control measures include both cultural and structural practices. The most widely used cultural practice in the county is conservation tillage, such as chisel plowing, no-till farming, or ridge planting. Conservation tillage systems leave a cover of crop residue on 20 to 90 percent of the surface. No-till farming is most effective on well drained and moderately well drained soils, such as Symerton and Warsaw soils.

Another common cultural practice is using a crop rotation that includes 1 or more years of close-growing grasses or legumes. If slopes are smooth and uniform, terraces and contour farming also are effective in controlling erosion.

Structural practices are needed in drainageways where concentrated runoff flows overland. Constructing grassed waterways or establishing erosion-control structures reduces the hazard of erosion in these areas (fig. 9).

Further information about the erosion-control measures suitable for each kind of soil is provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service.

A high pH within a depth of 40 inches can occur in Darroch and Swygert soils. The high soil reaction can reduce the uptake of some nutrients by the plants or cause other elements to accumulate to toxic levels. This limitation can be overcome by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems.

Drainage systems have been installed in most areas of the poorly drained and somewhat poorly drained soils used as cropland in the county; therefore, these soils are adequately drained for the crops commonly grown. Measures that maintain the drainage system are needed. A subsurface drainage system has been installed in areas of poorly drained soils, such as Milford, Drummer, and Ashkum soils. In some areas of poorly drained and very poorly drained soils, such as Bryce and Peotone soils, ponding is a hazard. Surface tile inlets or shallow surface ditches are needed to remove excess water. In places, somewhat poorly drained soils are wet long enough for productivity to be reduced in some years unless a drainage system is installed. A

Figure 9.—A grassed waterway removes excess surface water and helps to prevent the formation of gullies.

subsurface drainage system has been installed in areas of somewhat poorly drained soils, such as Andres and Elliott soils.

A root-restrictive layer limits the available water capacity in the soil. Some soils, such as Blount, Nappanee, and Ozaukee soils, are moderately deep to layers that restrict the penetration of plant roots. Increasing the rate of water infiltration, reducing the runoff rate, or planting drought-tolerant species can minimize the effects of this limitation. Planting cover crops and using a system of conservation tillage that leaves crop residue on the surface after planting increase the rate of water infiltration and reduce the runoff rate. Planting drought-tolerant species, such as soybeans and winter wheat, is beneficial because these crops make the most efficient use of the limited amount of water.

A limited available water capacity can reduce the productivity of soils. Moisture conservation can be accomplished by increasing the rate of water infiltration and reducing the runoff rate. Planting cover crops, applying a system of conservation tillage that leaves crop residue on the surface after planting, and farming on the contour increase the rate of water infiltration and reduce the runoff rate. Field windbreaks are effective in conserving moisture by limiting evaporation. Planting drought-tolerant species, such as soybeans and winter wheat, is beneficial because these crops make the most efficient use of the limited amount of water.

Soil tilth and surface crusting are important factors influencing the germination of seeds, the runoff rate, and the rate of water infiltration. Soils that have good tilth are granular and porous and have a high content of organic matter. Surface crusting can be a problem in areas of Blount and Ozaukee soils, which have a surface layer of silt loam or loam and a low content of organic matter. When the surface of these soils is left bare, a crust is likely to form on the surface after periods of intense rainfall. This crust is hard when dry. It inhibits seedling emergence, reduces the infiltration rate, and increases the runoff rate and the hazard of erosion. Regular additions of crop residue, manure, and other organic material improve soil structure and minimize crusting.

Poor tilth is a problem on soils that have a surface layer of silty clay loam or silty clay. Ashkum and Bryce soils are examples. If these soils are plowed when wet, the surface layer can become cloddy. This cloddiness hinders the preparation of a good seedbed. Tilling in the fall, leaving the soil surface rough, and leaving moderate amounts of crop residue on the surface generally result in good tilth in the spring. A system of strip or ridge tillage may also be effective in areas of these soils.

In areas where the soils have excessive permeability, such as areas of Watseka, Sparta, and Ade soils, the potential for ground-water contamination is a concern. These soils contain sandy and/or gravelly deposits within a depth of 60 inches and are very rapidly permeable in the lower part of the profile.

Several measures can be used to limit the amount of deep leaching of nutrients and pesticides that occurs as a result of excessive permeability. Applications of fertilizer should be based on the results of soil tests. The local office of the Cooperative Extension Service can help in determining the kinds and proper amounts of nutrients needed. The selection of chemicals should be based on their solubility in water, their ability to bind with the soil, and the rate at which they break down in the soil. Splitting chemical applications, particularly applications of nitrogen, is beneficial. This practice is less likely than a one-time application to result in excessive leaching. Also, planting legumes in a crop rotation or as a cover crop adds nitrogen to the soil, thereby reducing the amount of nitrogen needed in chemical applications. The practice of crop rotation is also effective in limiting the buildup of weed and insect populations and therefore reduces the amount of herbicides and insecticides needed per application. Finally, the use of small grain cover crops following fertilized corn crops can be effective in taking up some residual nitrogen from the soil.

Proper management is needed on hayland to prolong the life of desirable forage species, maintain or improve the quality and quantity of forage, and control erosion

and runoff. Hay may last as a vigorous crop for 4 or 5 years, depending on management and on the varieties seeded. Suitable hay plants include several legumes and cool-season grasses. Alfalfa is the most common legume grown for hay. It is often grown in mixtures with smooth bromegrass and orchardgrass. Alfalfa is best suited to moderately well drained soils, such as Graymont and Varna soils. Red clover also is grown for hay. Measures that maintain or improve fertility are needed. The amount of lime and fertilizer to be added to the soil should be based on the results of soil tests, the needs of the plants, and the expected level of yields. Seed varieties should be selected in accordance with the soil properties and the drainage conditions of the specific tract of land.

Overgrazing reduces the vigor of pasture plants and reduces forage production. It also increases the extent of weeds and brush. Deferred grazing, rotation grazing, and proper stocking rates help to prevent overgrazing. Deferred grazing allows the plants in pastures that are not being used to build up reserves of carbohydrates. Rotating grazing among several pastures allows each area a rest period.

Many of the soils in the survey area have a high water table in spring. Deferring grazing during wet periods can minimize surface compaction. Pasture renovation also helps to prevent compaction. Frost heave can damage alfalfa and red clover in areas that have a seasonal high water table. Leaving a cover of stubble 4 to 6 inches high during the winter and planting mixtures of grasses and legumes help to prevent frost heave.

Limitations Affecting Cropland and Pastureland

The management concerns affecting the use of the detailed soil map units in the survey area for crops and pasture are shown in table 6.

Cropland

The main concerns affecting the management of cropland in Grundy County are controlling water erosion, soil wetness, and ponding; limiting the effects of restricted permeability, high pH, root-restrictive layers, limited available water capacity, and excessive permeability; minimizing surface crusting; and improving poor tilth. Depth to bedrock, flooding, excess lime, and wind erosion are additional management concerns.

Generally, a combination of several practices is needed to control water erosion. Conservation tillage, stripcropping, contour farming, conservation cropping systems, crop residue management, diversions, and grassed waterways help to prevent excessive soil loss.

In some areas used as cropland, wetness and ponding are management concerns. Drainage systems consist of subsurface tile drains, surface inlet tile, open drainage ditches, or a combination of these. Measures that maintain the drainage system are needed.

Restricted permeability can increase the susceptibility of the soil to erosion and can limit the effectiveness of drainage systems. The hazard of erosion can be reduced by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems. Spacing the tile at narrow intervals improves the ability of the drainage system to lower the seasonal high water table.

High pH and excess lime can be partially overcome by incorporating green manure crops, manure, or crop residue into the soil and by using conservation tillage and conservation cropping systems. Also, crops may respond well to additions of phosphate fertilizer on soils that have a high content of lime.

A root-restrictive layer in a soil and bedrock within a depth of 40 inches can limit the total amount of moisture available to plants. These limitations cannot be easily

overcome. Planting cover crops and applying a system of conservation tillage that leaves crop residue on the surface after planting increase the rate of water infiltration, reduce the runoff rate, and conserve moisture. Also, planting drought-tolerant crop species makes the most efficient use of the limited supply of available water in the soil.

Conserving moisture is important in areas where the soils have a limited available water capacity. Measures that conserve moisture are primarily those that reduce the evaporation and runoff rates and increase the rate of water infiltration. Applying conservation tillage and conservation cropping systems, farming on the contour, stripcropping, establishing field windbreaks, and leaving crop residue on the surface conserve moisture.

Excessive permeability can cause deep leaching of nutrients and pesticides. Selecting appropriate chemicals and using split application methods reduce the hazard of ground-water contamination.

Practices that minimize crusting and improve soil tilth include incorporating green manure crops, manure, or crop residue into the soil and using a system of conservation tillage. Surface cloddiness can be controlled by avoiding tillage when the soil is too wet.

Flooding cannot be easily overcome. Winter small grain crops can be damaged by floodwater. Tilling and planting should be delayed in the spring until flooding is no longer a hazard.

Wind erosion can be controlled by applying a system of conservation tillage that leaves crop residue on the surface after planting and by keeping the surface rough.

The criteria used to determine some of the limitations or hazards in the table are described in the following paragraphs.

Crusting.—The average content of organic matter in the surface layer is 2.5 percent or less, and the content of clay in the surface layer is between 20 and 35 percent.

Depth to bedrock.—Bedrock is within a depth of 40 inches.

Excess lime.—The calcium carbonate equivalent is 15 percent or more within a depth of 16 inches.

Excessive permeability.—The lower limit of the permeability range within the soil profile is 6 inches or more per hour.

Flooding.—The soil is occasionally flooded or frequently flooded.

High pH.—The lower limit of the pH is 7.4 or more within a depth of 40 inches.

Limited available water capacity.—The available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 6 inches or less.

Ponding.—The water table is above the surface.

Poor tilth.—The lower limit of the clay content in the surface layer is 27 percent or more.

Restricted permeability.—Permeability is less than 0.2 inch per hour between the surface and a depth of 40 inches.

Root-restrictive layer.—Dense material is within a depth of 40 inches.

Water erosion.—The Kw factor of the surface layer multiplied by the upper limit of the slope is 0.8 or more, and the slope is 3 percent or more.

Wetness.—The seasonal high water table is within a depth of 1.5 feet.

Wind erosion.—The wind erodibility group (WEG) is 1 or 2.

Pastureland

The main concerns affecting the management of pastureland in Grundy County are high pH, water erosion, wetness, ponding, root-restrictive layers, limited available water capacity, frost heave, low pH, excessive permeability, depth to bedrock, flooding, low fertility, poor tilth, wind erosion, excess lime, and equipment limitations.

In soils that have high pH, the lower limit of the pH range is 7.4 or more within a depth of 40 inches. Excess lime occurs in soils that have a calcium carbonate equivalent of 15 percent or more within a depth of 16 inches. The high soil reaction

associated with these limitations can inhibit the uptake of certain nutrients and micronutrients by the plants or accelerates the absorption of certain other elements to the level of toxic concentrations. Either of these conditions affects the health and vigor of the plants. Applications of sulfate and phosphate compounds or additions of certain forms of nitrogen fertilizer can improve forage production.

Water erosion is a hazard in pastured areas where the value of the Kw factor multiplied by the upper limit of the slope is 0.8 or more and the slope is 3 percent or more. Water erosion reduces the productivity of pasture. It also results in onsite and offsite sedimentation, causes water pollution by sedimentation, and increases the runoff of livestock manure and other nutrients. Establishing or renovating stands of legumes and grasses helps to control erosion. Controlling erosion during seedbed preparation is a major concern. If the soil is tilled for the reseeding of pasture or hay crops, planting winter cover crops, establishing grassed waterways, farming on the contour, and applying a system of conservation tillage that leaves crop residue on the surface can help to minimize erosion.

Wetness and ponding are management concerns in some areas of pasture or hayland. Wetness occurs when the seasonal high water table is within a depth of 1.5 feet, and ponding occurs when the seasonal high water table is above the surface. Drainage systems consisting of subsurface tile drains, surface inlet tile, open drainage ditches, or a combination of these can lower the water table and help to remove excess water. Measures that maintain the drainage system are needed. Selecting species of grasses and legumes adapted to wet conditions improves forage production. Restricted use during wet periods helps to keep the pasture in good condition.

Soils that have a root-restrictive layer have a dense layer of till within a depth of 40 inches. This layer inhibits root penetration. This limitation lowers the total amount of water that is available to plants. Deep-rooted perennial legumes and grasses make the most efficient use of the limited amount of available water. Selecting drought-tolerant species of legumes and grasses improves forage production.

Limited available water capacity occurs in areas where the available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 6 inches or less. Available water capacity refers to the capacity of soils to hold water available for use by most plants. The quality and quantity of the pasture plants may be reduced if the amount of available water is inadequate for maintenance of a healthy community of desired pasture species. The pasture cannot support the desired number of livestock. A poor-quality pasture may increase the hazard of water erosion and increase the runoff of pollutants. Planting drought-resistant species of grasses and legumes helps to establish a cover of vegetation. The plants should not be clipped or grazed until they are sufficiently established.

Frost heave is a limitation in areas where the soils have a moderate or high potential for frost action. It occurs when ice lenses or bands that drive an ice wedge between two layers develop near the surface layer of a soil. The ice wedges heave the overlying soil layer upward, snapping the roots. Soils that have a low content of sand have small pores that hold water and enable ice lenses to form. Selecting adapted forage and hay varieties can help to minimize the effects of frost heave. Timely deferment of grazing helps to maintain a protective cover that insulates the soil, thereby reducing the effects of frost heave.

Soils that have low pH, or low reaction, have a pH value of 5.5 or less within a depth of 40 inches. Low pH inhibits the uptake of certain nutrients by the plants or accelerates the absorption of certain other elements to the level of toxic concentrations. Either of these conditions affects the health and vigor of the plants. Applications of lime should be based on the results of soil tests. The goal is to achieve the optimum pH level for the uptake of the major nutrients by the specific grass, legume, or combination of grasses and legumes.

Excessive permeability is a concern in areas where the lower limit of the permeability range is 6 or more inches per hour within the soil profile. Excessive permeability can cause deep leaching of nutrients and pesticides. Selecting appropriate chemicals and using split application methods can reduce the hazard of ground-water contamination when stands of legumes and grasses are established or renovated.

Soils in which the depth to bedrock is 40 inches or less have a restricted root zone and a limited available moisture capacity. Planting adapted forage and hay varieties helps to overcome this limitation. The plants should not be clipped or grazed until they are sufficiently established. Rotation grazing and timely deferment of grazing help to maintain healthy stands of forage plants, which, in turn, reduce the runoff rate and thus conserve moisture.

Frequent or occasional flooding can damage forage stands and delay harvesting in some years. Dikes and diversions help to control the extent of damage caused by floodwater. Selecting species of grasses and legumes adapted to wet conditions improves forage production. Restricted grazing during wet periods helps to keep the pasture in good condition.

Low fertility occurs in areas where the average content of organic matter in the surface layer is 1 percent or less or the cation-exchange capacity (CEC) is 7 milliequivalents or less per 100 grams of soil. Low fertility affects the health and vigor of the plants and thus has a direct impact on the quantity and quality of livestock. Additions of fertilizer and other organic material should be based on the results of soil tests, on the needs of specific plant species, and on the desired level of production.

Overgrazing or grazing when the soil is wet reduces the extent of plant cover and results in surface compaction and poor tilth and thus increases the susceptibility to erosion. Somewhat poorly drained, poorly drained, or severely eroded soils in which the content of clay in the surface layer is 27 percent or more are considered to have poor tilth. Proper stocking rates, rotation grazing, and timely deferment of grazing, especially during wet periods, help to keep the pasture in good condition. The proper location of livestock watering facilities helps to minimize surface compaction or the formation of ruts by making it unnecessary for cattle to travel long distances up and down the steeper slopes.

Soils that have a wind erodibility group (WEG) of 1 or 2 are susceptible to wind erosion. If the soil is tilled for the reseeding of pasture or hay crops, planting winter cover crops, applying a system of conservation tillage that leaves crop residue on the surface, and keeping the surface rough help to control wind erosion. Overgrazing or grazing when the soil is wet reduces the extent of the plant cover and thus increases the susceptibility to wind erosion. Proper stocking rates, rotation grazing, and timely deferment of grazing, especially during wet periods, help to keep the pasture in good condition.

The use of equipment is limited in areas where the average slope is more than 10 percent. This limitation can cause rapid wear of equipment and can hinder fertilization, harvesting, pasture renovation, and seedbed preparation. It cannot be easily overcome.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 7. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and

results of field trials and demonstrations also are considered (Olson and Lang, 2000; Olson and others, 2000).

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

Yields for grass-legume pasture under an average level of management also are shown in table 7. Pasture yields are expressed in terms of animal unit months. An animal unit month (AUM) is the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

The estimated yields in the table reflect the productive capacity of each soil for each of the principal crops and pasture plants. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 7 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961).

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, or wildlife habitat.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in all soil surveys.

The capability classification of the soils in this survey area is given in the section “Soil Series and Detailed Soil Map Units” and in the yields table.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation’s short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 8. This list does not constitute a recommendation for a particular land use. On

some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 5. The location is shown on the detailed soil maps. Some of the soil qualities that affect use and management are described under the heading “Soil Series and Detailed Soil Map Units.”

Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (Soil Survey Staff, 1999) and “Keys to Soil Taxonomy” (Soil Survey Staff, 2006) and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform. Table 9 lists the map units that include hydric soils, either as major components or as soils of minor extent. The hydric soils listed in the table meet the definition of a hydric soil and have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to

determine the hydric soils on a specific site (National Research Council, 1995; Hurt and Vasilas, 2006).

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
   B. are poorly drained or very poorly drained and have either:
      1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
      2) a water table at a depth of 0.5 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
      3) a water table at a depth of 1.0 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Windbreaks are often planted on land that did not originally support trees. Knowledge of how well the trees grow on such land can be gained only by observing and recording the growth of trees that have been planted and have survived. Many popular windbreak species are not indigenous to the areas in which they are planted.

Each tree or shrub species has certain climatic and physiographic limits. Within these parameters, a tree or shrub may grow well or grow poorly, depending on the characteristics of the soil. Each tree or shrub has definable potential heights in a given physiographic area and under a given climate. Accurate definitions of potential heights are necessary when a windbreak is planned and designed.

Table 10 shows the height that locally grown trees and shrubs are expected to reach in 20 years on soils in the survey area. The estimates in the table are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service or from a commercial nursery.

Forestland Management and Productivity

Little of the presettlement forestland in the survey area has been untouched or properly managed. Over the past century, new forests have been created only by natural succession of fallow upland and bottom-land areas, by abandonment of low-yielding cropland, and by seeding or planting of seedlings. Only a small percentage of the present forestland is under proper timber management. Areas of grazed forestland are slowly recovering, but many decades or a full forest generation may be needed before these areas can become productive without management.

The composition of today's forests is changing because of the introduction of species from around the world. The planting of trees for windbreaks, for erosion control, and for their ornamental value has significantly affected the forestland.

In 2000, Grundy County had about 21,825 acres of forestland (Illinois Department of Agriculture, 2002). This acreage represents about 8 percent of the total land area in the county. Several forest types occur in the county, including flood-plain forests, upland forests, and savannas.

The forests in the county are esthetically pleasing, but they also serve to protect and enhance watershed quality, recreation, and wildlife habitat. The small amount of forestland that still exists in the county could be greatly improved if proper management measures were applied. Assistance in establishing, improving, or managing forestland is available from foresters or natural resource specialists with various local, State, and Federal agencies, including the Illinois Department of Natural Resources, the Forest Service, the Natural Resources Conservation Service, and the local Soil and Water Conservation District.

Forestland Management

The tables described in this section rate the soils according to the limitations that affect various aspects of forestland management.

Forestland Harvest Equipment Considerations

Table 11 provides information regarding the use of harvest equipment in areas used as forestland.

For most soils spring is the most limiting season. Alternate thawing and freezing during snowmelt cause saturation and low strength of the surface soil layers. When thawing is complete, saturation continues for short periods in well drained soils to nearly all year in very poorly drained soils in depressions. Degrees of wetness are generally proportionate to the depth at which a seasonal high water table occurs and the duration of the high water table. The water table generally is lower in the summer during the heavy use of moisture by vegetation and is nearer to the surface during periods when absorbed precipitation is greater than the vegetation requires. Harvesting during periods of saturation usually results in severe soil damage, except when the soil is frozen. The preferred season for timber harvest on many soils is winter, when wetness and low soil strength can be overcome by freezing.

Considerations shown in the table are as follows:

Slope.—The upper limit of the slope range is more than 15 percent.

Flooding.—The soil is frequently flooded.

Wetness.—The soil is somewhat poorly drained, poorly drained, or very poorly drained or has a perched water table (any drainage class).

Depth to hard bedrock.—The depth to hard bedrock is less than 10 inches.

Rubbly surface.—The word "rubbly" is in the map unit name.

Surface stones.—The words "extremely stony" are included in the description of the surface layer, or 3 percent or more of the soil surface is covered with stones.

Surface boulders.—The word “bouldery” is included in the description of the surface layer, or 0.01 percent or more of the soil surface is covered with boulders.

Susceptible to rutting and wheel slippage (low strength).—The AASHTO classification is A-6, A-7, or A-8 in any layer at a depth of 20 inches or less.

Poor traction (loose sandy material).—The USDA texture includes sands or loamy sands in any layer at a depth of 10 inches or less.

Forestland Haul Road and Log Landing Considerations

Table 12 provides information regarding the use of the soils as haul roads and log landings. Log landings are areas where logs are assembled for transportation. Areas that require little or no cutting, filling, or surface preparation are desired. Haul roads serve as transportation routes from log landings to primary roads. Generally, haul roads are unpaved, but some are graveled.

For haul roads, considerations shown in the table are as follows:

Slope.—The slope is 8 percent or more.

Flooding.—The soil is frequently flooded.

Wetness.—The soil is somewhat poorly drained, poorly drained, or very poorly drained or has a perched water table (any drainage class).

Depth to hard bedrock.—Hard bedrock is within a depth of 20 inches.

Depth to soft bedrock.—Soft bedrock is within a depth of 20 inches.

Surface boulders.— The word “bouldery” is included in the description of the surface layer, or 0.01 percent or more of the soil surface is covered with boulders.

Low bearing strength.—The AASHTO classification is A-6, A-7, or A-8 in any layer within a depth of 20 inches.

Rubbly surface.—The word “rubbly” is in the map unit name.

For log landings, considerations shown in the table are as follows:

Slope.—The slope is more than 6 percent.

Flooding.—The soil is occasionally flooded or frequently flooded.

Wetness.—The soil is somewhat poorly drained, poorly drained, or very poorly drained or has a perched water table (any drainage class).

Surface boulders.— The word “bouldery” is included in the description of the surface layer, or 0.01 percent or more of the soil surface is covered with boulders.

Susceptible to rutting and wheel slippage (low strength).—The AASHTO classification is A-6, A-7, or A-8 in any layer at a depth of 20 inches or less.

Rubbly surface.—The word “rubbly” is in the map unit name.

Forestland Site Preparation and Planting Considerations

Table 13 provides information regarding considerations affecting site preparation and planting in areas used as forestland.

Considerations shown in the table are as follows:

Slope.—The upper limit of the slope range is more than 15 percent.

Flooding.—The soil is frequently flooded.

Wetness.—The soil is somewhat poorly drained, poorly drained, or very poorly drained or has a perched water table (any drainage class).

Depth to hard bedrock.—The depth to hard bedrock is less than 20 inches.

Surface stones.— The word “stony” is included in the description of the surface layer, or 0.01 percent or more of the soil surface is covered with stones.

Surface boulders.— The word “bouldery” is included in the description of the surface layer, or 0.01 percent or more of the soil surface is covered with boulders.

Water erosion.—The slope is 8 percent or more.

Potential poor tilth and compaction.—The AASHTO classification is A-6 or A-7 in the upper 10 inches.

Rubbly surface.—The word “rubbly” is in the map unit name.

Cobbly surface.— The word “cobbly” is included in the description of the surface layer, or 0.1 percent or more of the surface is covered with cobbles.

Forestland Productivity

Table 14 can help woodland owners or forest managers plan the use of soils for wood crops. Only those soils commonly used for wood crops are listed.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the “National Forestry Manual,” which is available in local offices of the Natural Resources Conservation Service or online at http://soils.usda.gov/technical/.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Suggested trees to plant are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Recreation

Grundy County offers a wide variety of recreational facilities, including a State park and other conservation areas. The Gebhard Woods State Park provides an assortment of outdoor activities, including canoeing, fishing, hunting, hiking, biking, camping, and picnicking. Other recreational areas include the Goose Lake Prairie State Natural Area, the Heidecke State Fish and Wildlife Area, and the Mazonia Fish and Wildlife Area. The Illinois and Michigan Canal State Park runs through Grundy County and provides recreational outlets for the area and surrounding region (fig. 10). Most municipalities in the county offer a variety of recreational facilities, including playgrounds, swimming pools, and golf courses.

The soils of the survey area are rated in tables 15a and 15b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and

Figure 10.—Bicycle and hiking trails are among the recreational features of the Illinois and Michigan Canal State Park.

accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in tables 15a and 15b can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Wildlife Habitat

Because of diverse topography resulting primarily from glacial action, Grundy County provides a variety of aquatic and upland habitats that support an abundance of wildlife species. The characteristic aquatic habitats include several rivers, numerous streams, and wetlands. The wetland types include marshes, glacial potholes, hillside seeps, and flood-plain wetlands along streams and rivers. These areas of wetland provide important storm-water storage and water quality benefits to the county as well as habitat for such species as ducks, geese, great blue herons, muskrat, mink, beaver, and numerous frogs, toads, and turtles.

The upland areas, which range from steep to gently sloping hillsides and ridges to nearly level ground moraines, terraces, and outwash plains, were once covered by a sea of native prairie grasses and small open oak woodlands known as savannas. These natural communities were once home to such species as buffalo, prairie

chickens, and wolves. As the county was settled, the conversion of land for agriculture and urbanization altered these natural communities and the wildlife populations associated with them. The landscape in Grundy County is now a mosaic of urban development, cropland, pasture, small woodlots, and wetlands and other waterways supporting wildlife species that have adapted to the human-altered landscape. These species include white-tailed deer, mallards, pheasants, squirrels, crows, cardinals, house sparrows, raccoons, foxes, and coyotes.

In general, most of the land in the county is not managed primarily for wildlife. Good land management practices, however, commonly improve the habitat for wildlife. For example, farm practices that leave crop residue on the fields during the fall and winter not only help to control erosion but also provide winter cover and food for some wildlife species. Allowing grassed waterways, road ditches, fence lines, set-aside fields, and vacant properties to remain unmowed until early August provides much-needed habitat for ground-nesting wildlife, such as rabbits, pheasants, and many species of songbirds.

Many temporarily and seasonally flooded wetlands have been impacted by land use practices. Development and cultivation of these wetlands should be avoided. Buffer strips surrounding wetland areas provide food and nesting cover for many wildlife species and keep these areas from filling in with eroded sediment. Wetlands, streambanks, and woodlots should be fenced so that livestock are excluded. Fencing protects and maintains the native plant communities that support wildlife species, helps to control erosion, and improves water quality in streams and rivers.

When attempts are made to restore or manage an area for wildlife, it is important to understand the kinds of soils on the site. For example, soils that have a seasonal high water table will most likely support vegetation that is tolerant of wet conditions and thus attract wetland wildlife species. If the soil series is characterized by wetness or hydric properties but the area does not appear to be susceptible to wetness, there may be an existing drainage ditch or a system of subsurface tile drains. Areas that have been drained can provide opportunities for the restoration of wetland habitat as long as negative impacts on neighboring properties are avoided.

Nonhydric soils in the uplands support communities once dominated by prairie grass and oak savanna habitats. These habitats can also be restored through management that promotes or reestablishes the native plant species while controlling or eliminating competing exotic vegetation.

Assistance with wildlife habitat projects can be obtained from various local, State, and Federal agencies, including the Illinois Department of Natural Resources, the U.S. Fish and Wildlife Service, the Natural Resources Conservation Service, and the local Soil and Water Conservation District.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 16, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be

established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, soybeans, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are bromegrass, timothy, orchardgrass, clover, alfalfa, and birdsfoot trefoil.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, indiangrass, blueberry, goldenrod, lambsquarters, dandelions, coneflowers, sunflowers, blackberry, ragweed, wheatgrass, and nightshade.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, box elder, birch, maple, green ash, willow, and American elm. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are American plum, hazelnut, dogwood, and arrowwood.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, cedar, and tamarack.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, rushes, sedges, wild rice, arrowhead, waterplantain, cattails, and prairie cordgrass.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, wildlife watering developments, beaver ponds, and other wildlife ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, and shrubs (fig. 11). These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted

Figure 11.—Openland wildlife habitat in the Goose Lake Prairie State Natural Area. The soils in this area are dominantly shallow or moderately deep over bedrock.

to these areas include Hungarian partridge, ring-necked pheasant, bobwhite quail, sharp-tailed grouse, meadowlark, field sparrow, killdeer, cottontail rabbit, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, thrushes, woodpeckers, owls, squirrels, raccoons, and white-tailed deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, bitterns, rails, kingfishers, muskrat, otter, mink, beaver, frogs, and turtles.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section.

Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Over the past decade, Grundy County has experienced a significant increase in population. This increase has had an important impact on land use.

Urban erosion can be a major factor affecting water quality. It is estimated that the rate of urban erosion and the resulting sediment may be as much as 300 to 400 times the erosion rate in agricultural areas. Urban land under development is commonly stripped for several years without adequate erosion control. Soil compaction and massive earth moving are more conducive to erosion than is seedbed preparation for crop production.

Urban erosion-control practices involve essentially the same concepts as those applied to agriculture. The surface of the soil should be protected from the impact of raindrops, and the runoff from accumulated rainwater must be controlled. Effective control of erosion and sediment involves three major elements. First, protecting the soil can be accomplished by maintaining a permanent or temporary vegetative cover, mulching, or using a variety of other practices. Second, runoff can be controlled with conservation practices. These practices include diversions, grassed waterways or lined swales, storm sewers, or gully-control structures. Third, sediment can be captured by using sediment basins, sediment traps, and filter fences.

Erosion-control measures are most effective in combinations. The measures used and their effectiveness depend on the soil characteristics and topography. Information about the design of erosion-control measures is provided in the “Illinois Urban Manual” (USDA/NRCS, 2002), which is available in local offices of the Natural Resources Conservation Service.

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 17a and 17b show the degree and kind of soil limitations that

affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Tables 18a and 18b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious

soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading

required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Tables 19a and 19b give information about the soils as potential sources of reclamation material, roadfill, topsoil, gravel, and sand. Normal compaction, minor processing, and other standard construction practices are assumed.

In table 19a, the rating class terms are *good, fair,* and *poor*. The features that limit the soils as sources of reclamation material, roadfill, and topsoil are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of these materials. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Gravel and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 19b, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

Water Management

Tables 20a, 20b, and 20c give information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; aquifer-fed excavated ponds; grassed waterways; terraces and diversions; tile drains and underground outlets; and irrigation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Table 20a

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Table 20b

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways. A hazard of wind erosion, a low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Tile drains and underground outlets are used in some areas to remove excess subsurface and surface water from the soil. The ratings in the table apply to undisturbed soils that commonly have a seasonal high water table within a depth of about 3.5 feet. Current land use is not considered in the ratings. Depth to bedrock, a dense layer, or a cemented pan, the content of large stones, and the content of clay influence the ease of digging, filling, and compacting. A seasonal high water table, ponding, and flooding may restrict the period when excavations can be made. The slope influences the use of machinery. Soil texture and depth to the water table influence the resistance to sloughing. Subsidence of organic layers influences grade

and stability of tile drains. Limitations affecting areas where the tile line passes through soils in which the water table is generally below a depth of 3.5 feet are provided in the table that includes the column “shallow excavations,” which is described under the heading “Building Site Development.”

Table 20c

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 21 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter (fig. 12). "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group

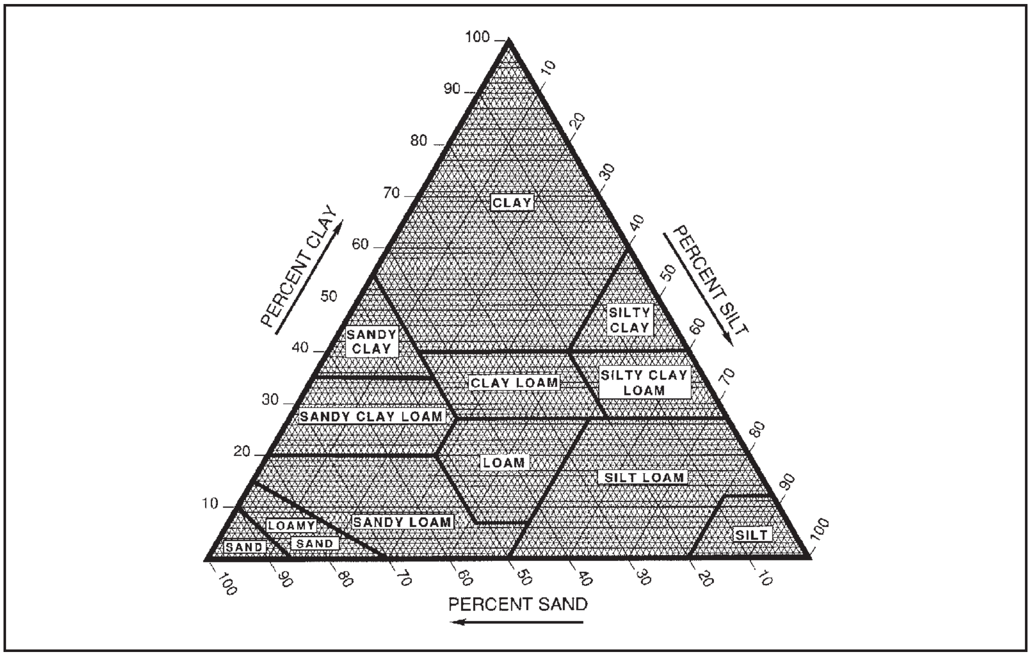


Figure 12.—Percentages of clay, silt, and sand in the basic USDA soil textural classes.

index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 22 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as

classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In the table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$- or $^1/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (Ksat) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (Ksat). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 22, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factors are shown in table 22 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the “National Soil Survey Handbook” (available online at http://soils.usda.gov).

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 23 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

Water Features

Table 24 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 24 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall

or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* of flooding are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year). *Common* is used when the occasional and frequent classes are grouped for certain purposes.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Water table refers to a saturated zone in the soil. Table 24 indicates the depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone for the specified *months* in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

The table also shows the *kind of water table*, that is, apparent or perched. An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Soil Features

Table 25 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness of the restrictive layer, which significantly affects the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Frankie, W.T. 1998. Guide to the geology of Kankakee River State Park Area, Kankakee County, Illinois. Department of Natural Resources, Illinois State Geological Survey. Field Trip Guidebook 1998B.

Hansel, A.K., and W.H. Johnson. 1996. Wedron and Mason Groups: Lithostratigraphic reclassification of deposits of the Wisconsin Episode, Lake Michigan lobe area. Illinois State Geological Survey, Bulletin 104.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Illinois Department of Agriculture. 2002. Land cover of Illinois 1999-2000. In cooperation with Illinois Department of Natural Resources and U.S. Department of Agriculture, National Agricultural Statistics Service. [http://www.agr.state.il.us/gis/stats/landcover/index.htm]

Illinois State Museum. 1995. About the Mazon Creek fossils and deposit. [http://www.agr.state.il.us/mazon_creek/about_mazon_creek.html]

Jenny, Hans. 1941. Factors of soil formation.

Leighton, M.M., G.E. Ekblaw, and L. Horberg. 1948. Physiographic divisions of Illinois. Illinois State Geological Survey, Report of Investigations 129.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Olson, K.R., and J.M. Lang. 2000. Optimum crop productivity ratings for Illinois soils. University of Illinois, College of Agricultural, Consumer and Environmental Sciences. Bulletin 811.

Olson, K.R., J.M. Lang, J.D. Garcia-Paredes, R.N. Majchrzak, C.I. Hadley, M.E. Woolery, and R.M. Rejesus. 2000. Average crop, pasture, and forestry productivity ratings for Illinois soils. University of Illinois, College of Agricultural, Consumer and Environmental Sciences. Bulletin 810.

Reinebach, L.M. 1980. Soil survey of Grundy County, Illinois. University of Illinois Agricultural Experiment Station Soil Report 112.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. [http://soils.usda.gov/technical/]

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2003. Keys to soil taxonomy. 9th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture. 1961. Land capability classification. Soil Conservation Service. U.S. Department of Agriculture Handbook 210.

United States Department of Agriculture, Natural Resources Conservation Service. 2002. Illinois urban manual.

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. [http://soils.usda.gov/]

United States Department of Commerce, Bureau of the Census. 2000. 2000 census of population and housing.

United States Department of Commerce, Bureau of the Census. 2002. 2002 census of agriculture.

Willman, H.B., and J.N. Payne. 1942. Geology and mineral resources of the Marseilles, Ottawa, and Streator Quadrangles. Illinois State Geological Survey, Bulletin 66.

Glossary

Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the “National Soil Survey Handbook” (available in local offices of the Natural Resources Conservation Service or on the Internet).

Ablation till. Loose, relatively permeable earthy material deposited during the downwasting of nearly static glacial ice, either contained within or accumulated on the surface of the glacier.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Alpha,alpha-dipyridyl. A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction toward which a slope faces. Also called slope aspect.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Backswamp. A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope (geomorphology). A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Beach deposits. Material, such as sand and gravel, that is generally laid down parallel to an active or relict shoreline of a postglacial or glacial lake.

Beach ridge. A low, essentially continuous mound of beach or beach-and-dune material accumulated by the action of waves and currents on the backshore of a beach, beyond the present limit of storm waves or the reach of ordinary tides, and occurring singly or as one of a series of approximately parallel deposits. The ridges are roughly parallel to the shoreline and represent successive positions of an advancing shoreline.

Bedding plane. A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology) from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Board foot. A unit of measurement represented by a board 1 foot wide, 1 foot long, and 1 inch thick.

Bog. Waterlogged, spongy ground, consisting primarily of mosses, containing acidic, decaying vegetation (such as sphagnum, sedges, and heaths) that develops into peat.

Bottom land. An informal term loosely applied to various portions of a flood plain.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catsteps. See Terracettes.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. See Redoximorphic features.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A dense, compact, slowly permeable subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. A claypan is commonly hard when dry and plastic and sticky when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. See Redoximorphic features.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat). A type of limnic layer composed predominantly of fecal material derived from aquatic animals.

Cord. A unit of measurement of stacked wood. A standard cord occupies 128 cubic feet with dimensions of 4 feet by 4 feet by 8 feet.

Corrosion (geomorphology). A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations). Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depression. Any relatively sunken part of the earth's surface; especially a low-lying area surrounded by higher ground. A closed depression has no natural outlet for surface drainage. An open depression has a natural outlet for surface drainage.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Diamicton. A generic term for any nonlithified, nonsorted or poorly sorted sediment that contains a wide range of particle sizes, such as coarse fragments contained within a fine earth matrix (e.g., till); used when the genetic content of the sediment is uncertain.

Diatomaceous earth. A geologic deposit of fine, grayish siliceous material composed chiefly or entirely of the remains of diatoms.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Drift. A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact till that has a core of bedrock or drift. It commonly has a blunt nose facing the direction from which the ice approached and a gentler slope tapering in the other direction. The longer axis is parallel to the general direction of glacier flow. Drumlins are products of streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Dune. A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

Earthy fill. See Mine spoil.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian deposit. Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A surficial lag concentration or layer of gravel and other rock fragments that remains on the soil surface after sheet or rill erosion or wind has removed the finer soil particles and that tends to protect the underlying soil from further erosion.

Erosion surface. A land surface shaped by the action of erosion, especially by running water.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Esker. A long, narrow, sinuous, steep-sided ridge of stratified sand and gravel deposited as the bed of a stream flowing in an ice tunnel within or below the ice (subglacial) or between ice walls on top of the ice of a wasting glacier and left behind as high ground when the ice melted. Eskers range in length from less than a kilometer to more than 160 kilometers and in height from 3 to 30 meters.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Flood-plain landforms. A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-

plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

Flood-plain splay. A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

Flood-plain step. An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

Fluvial. Of or pertaining to rivers or streams; produced by stream or river action.

Footslope. The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Geomorphology. The science that treats the general configuration of the earth's surface; specifically the study of the classification, description, nature, origin, and development of landforms and their relationships to underlying structures, and the history of geologic changes as recorded by these surface features. The term is especially applied to the genetic interpretation of landforms.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur in the form of outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are bedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Head slope (geomorphology). A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

Herbaceous peat. An accumulation of organic material, decomposed to some degree, that is predominantly the remains of sedges, reeds, cattails, and other herbaceous plants.

High-chroma zones. Zones having chroma of 3 or more. Typical color in areas of iron concentrations.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

Hillslope. A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

L horizon.—A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the

overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Ice-walled lake plain. A relict surface marking the floor of an extinct lake basin that was formed on solid ground and surrounded by stagnant ice in a stable or unstable superglacial environment on stagnation moraines. As the ice melted, the lake plain became perched above the adjacent landscape. The lake plain is well sorted, generally fine textured, stratified deposits.

Igneous rock. Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general

direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology). A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Intermittent stream. A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. See Redoximorphic features.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame. A low mound, knob, hummock, or short irregular ridge composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier; by a supraglacial stream in a low place or hole on the surface of the glacier; or as a ponded deposit on the surface or at the margin of stagnant ice.

Karst (topography). A kind of topography that formed in limestone, gypsum, or other soluble rocks by dissolution and that is characterized by closed depressions, sinkholes, caves, and underground drainage.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Ksat. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake bed. The bottom of a lake; a lake basin.

Lake plain. A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Lake terrace. A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Lamella. A thin (commonly less than 1 cm thick), discontinuous or continuous, generally horizontal layer of fine material (especially clay and iron oxides) that has been pedogenically concentrated (illuviated within a coarser textured eluviated layer several centimeters to several decimeters thick).

Landslide. A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^{1}/_{3}$- or $^{1}/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Material transported and deposited by wind and consisting dominantly of silt-sized particles.

Low strength. The soil is not strong enough to support loads.

Low-chroma zones. Zones having chroma of 2 or less. Typical color in areas of iron depletions.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

MAP. Mean annual precipitation, expressed in inches.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.

Mass movement. A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

Masses. See Redoximorphic features.

Meander belt. The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

Meander scar. A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.

Meander scroll. One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.

Mine spoil. An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. A kind of map unit that has little or no natural soil and supports little or no vegetation.

MLRA (major land resource area). A geographic area characterized by a particular pattern of land uses, elevation and topography, soils, climate, water resources, and potential natural vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. In terms of glacial geology, a mound, ridge, or other topographically distinct accumulation of unsorted, unstratified drift, predominantly till, deposited primarily by the direct action of glacial ice in a variety of landforms. Also, a general term for a landform composed mainly of till (except for kame moraines, which are composed mainly of stratified outwash) that has been deposited by a glacier. Some types of moraines are disintegration, end, ground, kame, lateral, recessional, and terminal.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mucky peat. Unconsolidated soil material consisting primarily of organic matter that is in an intermediate stage of decomposition such that a significant part of the material can be recognized and a significant part of the material cannot be recognized.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. See Redoximorphic features.

Nose slope (geomorphology). A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash. Stratified and sorted sediments (chiefly sand and gravel) removed or “washed out” from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of a glacier. The coarser material is deposited nearer to the ice.

Outwash plain. An extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Poletimber. Hardwood trees ranging from 5 to 11 inches and conifers ranging from 5 to 9 inches in diameter at breast height.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Pore linings. See Redoximorphic features.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations. See Redoximorphic features.

Redoximorphic depletions. See Redoximorphic features.

Redoximorphic features. Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:
   - A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*
   - B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*
   - C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. Redoximorphic depletions.—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:
   - A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*
   - B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).
3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix. See Redoximorphic features.

Regolith. All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

Relief. The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

Rill. A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Rise. A slight increase in elevation of the land surface, typically with a broad summit and gently sloping sides.

Riser. The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapling. A tree ranging from 1 to 5 inches in diameter at breast height.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturated hydraulic conductivity (Ksat). See Permeability.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Sawtimber. Hardwood trees more than 11 inches and conifers more than 9 inches in diameter at breast height.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Seedling. A tree less than 1 inch in diameter at breast height.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike. All the soils of a given series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope (geomorphology). A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A closed, circular or elliptical depression, commonly funnel shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock (e.g., limestone, gypsum, or salt) or by collapse of underlying caves within bedrock. Complexes of sinkholes in carbonate-rock terrain are the main components of karst topography.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope alluvium. Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size sand/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Strath terrace. A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsidence. The potential decrease in surface elevation as a result of the drainage of wet soils that have organic layers or semifluid, mineral layers. Subsidence, as a result of drainage, is attributed to (1) shrinkage from drying, (2) consolidation because of the loss of ground-water buoyancy, (3) compaction from tillage or manipulation, (4) wind erosion, (5) burning, and (6) biochemical oxidation.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Swale. A slight depression in the midst of generally level land. A shallow depression in an undulating ground moraine resulting from uneven glacial deposition.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. An end moraine that marks the farthest advance of a glacier. It typically has the form of a massive arcuate or concentric ridge, or complex of ridges, and is underlain by till and other types of drift.

Terrace (conservation). An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geomorphology). A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

Terracettes. Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till. Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

Till plain. An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread. The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

Upland. An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Valley fill. The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Woody peat. An accumulation of organic material that is predominantly composed of trees, shrubs, and other woody plants.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1971-96 at Gebhard Woods State Park)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	29.0	11.8	20.4	53	-19	0	1.72	0.80	2.60	4	8.2
February---	34.7	16.3	25.5	62	-14	0	1.44	.79	2.11	3	6.2
March------	47.7	28.4	38.0	79	5	24	2.77	1.55	3.93	6	2.1
April------	61.2	38.6	49.9	87	18	120	3.47	1.91	4.90	6	.2
May--------	73.4	48.7	61.1	93	30	353	3.62	1.86	5.22	6	.0
June-------	82.9	58.4	70.7	97	40	615	3.67	1.61	5.78	6	.0
July-------	85.7	62.9	74.3	99	47	739	3.75	1.43	5.93	6	.0
August-----	83.2	60.4	71.8	96	44	653	3.45	1.64	4.96	6	.0
September--	76.2	51.9	64.0	93	32	412	3.25	1.25	4.95	5	.0
October----	63.8	39.9	51.9	86	22	137	2.52	1.34	3.33	5	.0
November---	48.8	30.7	39.8	75	8	28	3.18	1.31	5.00	6	1.1
December---	35.2	19.1	27.1	61	-10	2	2.50	1.37	3.47	5	5.6
Yearly:											
Average---	60.1	38.9	49.5	---	---	---	---	---	---	---	---
Extreme---	103	-24	---	100	-20	---	---	---	---	---	---
Total-----	---	---	---	---	---	3,083	35.34	26.52	40.19	64	23.4

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1971-96 at Gebhard Woods State Park)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 18	Apr. 28	May 15
2 years in 10 later than--	Apr. 13	Apr. 23	May 10
5 years in 10 later than--	Apr. 3	Apr. 14	Apr. 28
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 18	Oct. 5	Sept. 23
2 years in 10 earlier than--	Oct. 23	Oct. 11	Sept. 28
5 years in 10 earlier than--	Nov. 1	Oct. 22	Oct. 8

Table 3.--Growing Season

(Recorded in the period 1971-96 at Gebhard Woods State Park)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	191	168	144
8 years in 10	198	176	150
5 years in 10	211	190	162
2 years in 10	224	205	174
1 year in 10	230	213	181

Table 4.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Soil name	Family or higher taxonomic class
Ade	Coarse-loamy, mixed, superactive, mesic Lamellic Argiudolls
Andres	Fine-loamy, mixed, superactive, mesic Aquic Argiudolls
Ashkum	Fine, mixed, superactive, mesic Typic Endoaquolls
Beecher	Fine, illitic, mesic Udollic Epiaqualfs
Blount	Fine, illitic, mesic Aeric Epiaqualfs
Braidwood	Coarse-loamy, mixed, subactive, calcareous, mesic Typic Udorthents
Brenton	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Bryce	Fine, mixed, superactive, mesic Vertic Endoaquolls
*Calamine	Fine, mixed, superactive, mesic Typic Endoaquolls
Channahon	Loamy, mixed, superactive, mesic Lithic Argiudolls
*Channahon	Loamy, mixed, superactive, mesic Typic Argiudolls
Chatsworth	Fine, illitic, mesic Oxyaquic Eutrudepts
Chenoa	Fine, illitic, mesic Aquic Argiudolls
Comfrey	Fine-loamy, mixed, superactive, mesic Cumulic Endoaquolls
Cresent	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
Darroch	Fine-loamy, mixed, superactive, mesic Aquic Argiudolls
Drummer	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Elliott	Fine, illitic, mesic Aquic Argiudolls
Elpaso	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Faxon	Fine-loamy, mixed, superactive, mesic Typic Endoaquolls
Gilford	Coarse-loamy, mixed, superactive, mesic Typic Endoaquolls
Granby	Sandy, mixed, mesic Typic Endoaquolls
Graymont	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
*Graymont	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Hesch	Coarse-loamy, mixed, active, mesic Typic Argiudolls
*High Gap	Fine-loamy, mixed, active, mesic Mollic Hapludalfs
Hononegah	Sandy, mixed, mesic Entic Hapludolls
Kane	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Aquic Argiudolls
Kankakee	Loamy-skeletal, mixed, superactive, mesic Typic Hapludolls
Lawson	Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls
Lenzburg	Fine-loamy, mixed, active, calcareous, mesic Haplic Udarents
Lorenzo	Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Typic Argiudolls
Martinsville	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Martinton	Fine, illitic, mesic Aquic Argiudolls
Milford	Fine, mixed, superactive, mesic Typic Endoaquolls
Muskego	Coprogenous, euic, mesic Limnic Haplosaprists
Nappanee	Fine, illitic, mesic Aeric Epiaqualfs
Oakville	Mixed, mesic Typic Udipsamments
Orthents, loamy	Fine-loamy, mixed, active, nonacid, mesic Oxyaquic Udorthents
Ozaukee	Fine, illitic, mesic Oxyaquic Hapludalfs
Papineau	Fine-loamy over clayey, mixed, active, mesic Aquic Argiudolls
Peotone	Fine, smectitic, mesic Cumulic Vertic Endoaquolls
Proctor	Fine-silty, mixed, superactive, mesic Typic Argiudolls
Reddick	Fine-loamy, mixed, superactive, mesic Typic Endoaquolls
Ridgeville	Coarse-loamy, mixed, superactive, mesic Aquic Argiudolls
Roby	Coarse-loamy, mixed, superactive, mesic Aquic Hapludalfs
Rockton	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
Rodman	Sandy-skeletal, mixed, mesic Typic Hapludolls
Ross	Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls
Sawmill	Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls
Selma	Fine-loamy, mixed, superactive, mesic Typic Endoaquolls
*Shadeland	Fine-loamy, mixed, active, mesic Udollic Endoaqualfs
Sparta	Sandy, mixed, mesic Entic Hapludolls
Starks	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
Swygert	Fine, mixed, active, mesic Aquic Argiudolls
*Swygert	Fine, mixed, active, mesic Aquollic Hapludalfs
Symerton	Fine-loamy, mixed, superactive, mesic Oxyaquic Argiudolls
*Symerton	Fine-loamy, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs

Table 4.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Titus	Fine, smectitic, mesic Vertic Endoaquolls
Varna	Fine, illitic, mesic Oxyaquic Argiudolls
*Varna	Fine, illitic, mesic Mollic Oxyaquic Hapludalfs
*Varna	Fine, illitic, mesic Oxyaquic Hapludalfs
Warsaw	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Argiudolls
*Warsaw	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Mollic Hapludalfs
Watseka	Sandy, mixed, mesic Aquic Hapludolls
Will	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Endoaquolls

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
23A	Blount silt loam, 0 to 2 percent slopes	459	0.2
23B	Blount silt loam, 2 to 4 percent slopes	1,726	0.6
42A	Papineau sandy loam, 0 to 2 percent slopes	1,473	0.5
49A	Watseka loamy fine sand, 0 to 2 percent slopes	2,710	1.0
69A	Milford silty clay loam, 0 to 2 percent slopes	9,424	3.4
88B	Sparta loamy fine sand, 1 to 6 percent slopes	2,396	0.9
91A	Swygert silty clay loam, 0 to 2 percent slopes	4,036	1.5
91B	Swygert silty clay loam, 2 to 4 percent slopes	1,614	0.6
91B2	Swygert silty clay loam, 2 to 4 percent slopes, eroded	201	*
91C2	Swygert silty clay loam, 4 to 6 percent slopes, eroded	207	*
93C2	Rodman gravelly loam, 4 to 6 percent slopes, eroded	1	*
98B	Ade loamy fine sand, 1 to 6 percent slopes	4,792	1.7
125A	Selma loam, 0 to 2 percent slopes	15,190	5.5
132A	Starks silt loam, 0 to 2 percent slopes	1,339	0.5
146A	Elliott silt loam, 0 to 2 percent slopes	17,891	6.5
146B	Elliott silt loam, 2 to 4 percent slopes	1,930	0.7
148A	Proctor silt loam, 0 to 2 percent slopes	845	0.3
148B	Proctor silt loam, 2 to 5 percent slopes	3,126	1.1
149A	Brenton silt loam, 0 to 2 percent slopes	11,336	4.1
151A	Ridgeville fine sandy loam, 0 to 2 percent slopes	5,072	1.8
152A	Drummer silty clay loam, 0 to 2 percent slopes	27,260	9.9
184A	Roby fine sandy loam, 0 to 2 percent slopes	1,074	0.4
189A	Martinton silt loam, 0 to 2 percent slopes	5,132	1.9
189B	Martinton silt loam, 2 to 4 percent slopes	337	0.1
201A	Gilford fine sandy loam, 0 to 2 percent slopes	4,749	1.7
223B	Varna silt loam, 2 to 4 percent slopes	420	0.2
223B2	Varna silt loam, 2 to 4 percent slopes, eroded	585	0.2
223C2	Varna silt loam, 4 to 6 percent slopes, eroded	320	0.1
223C3	Varna silty clay loam, 4 to 6 percent slopes, severely eroded	830	0.3
228A	Nappanee silt loam, 0 to 2 percent slopes	489	0.2
228B	Nappanee silt loam, 2 to 4 percent slopes	564	0.2
232A	Ashkum silty clay loam, 0 to 2 percent slopes	21,721	7.9
235A	Bryce silty clay, 0 to 2 percent slopes	5,099	1.9
241D3	Chatsworth silty clay, 6 to 12 percent slopes, severely eroded	447	0.2
241E3	Chatsworth silty clay, 12 to 20 percent slopes, severely eroded	314	0.1
241F	Chatsworth silty clay loam, 20 to 30 percent slopes	705	0.3
241G	Chatsworth silty clay loam, 30 to 50 percent slopes	1,118	0.4
290B	Warsaw loam, 2 to 4 percent slopes	877	0.3
290C2	Warsaw silt loam, 4 to 6 percent slopes, eroded	1	*
293A	Andres silt loam, 0 to 2 percent slopes	11,341	4.1
294A	Symerton silt loam, 0 to 2 percent slopes	222	*
294B	Symerton silt loam, 2 to 5 percent slopes	1,710	0.6
294C2	Symerton silt loam, 5 to 10 percent slopes, eroded	274	*
298A	Beecher silt loam, 0 to 2 percent slopes	1,150	0.4
298B	Beecher silt loam, 2 to 4 percent slopes	343	0.1
315A	Channahon silt loam, 0 to 2 percent slopes	649	0.2
315B	Channahon silt loam, 2 to 4 percent slopes	374	0.1
315C2	Channahon silt loam, 4 to 6 percent slopes, eroded	188	*
318B	Lorenzo loam, 2 to 4 percent slopes	2	*
329A	Will silty clay loam, 0 to 2 percent slopes	10	*
330A	Peotone silty clay loam, 0 to 2 percent slopes	1,172	0.4
343A	Kane silt loam, 0 to 2 percent slopes	380	0.1
354B	Hononegah loamy sand, 1 to 6 percent slopes	1,254	0.5
354D	Hononegah loamy sand, 6 to 12 percent slopes	651	0.2
356A	Elpaso silty clay loam, 0 to 2 percent slopes	1,522	0.6
494B	Kankakee fine sandy loam, 2 to 4 percent slopes	11	*
503A	Rockton silt loam, 0 to 2 percent slopes	714	0.3
503B	Rockton silt loam, 2 to 4 percent slopes	261	*
513A	Granby fine sandy loam, 0 to 2 percent slopes	1,085	0.4
516A	Faxon silt loam, 0 to 2 percent slopes	1,176	0.4
530B	Ozaukee silt loam, 2 to 4 percent slopes	1,126	0.4
530C2	Ozaukee silt loam, 4 to 6 percent slopes, eroded	250	*
530C3	Ozaukee silty clay loam, 4 to 6 percent slopes, severely eroded	144	*

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
530D2	Ozaukee silt loam, 6 to 12 percent slopes, eroded	200	*
530D3	Ozaukee silty clay loam, 6 to 12 percent slopes, severely eroded	81	*
530E2	Ozaukee silt loam, 12 to 20 percent slopes, eroded	71	*
530F	Ozaukee silt loam, 20 to 30 percent slopes	106	*
536	Dumps	303	0.1
541B	Graymont silt loam, 2 to 5 percent slopes	1,396	0.5
541C2	Graymont silt loam, 5 to 10 percent slopes, eroded	305	0.1
553A	Bryce, shale substratum-Calamine silty clays, 0 to 2 percent slopes	4,058	1.5
555A	Shadeland silt loam, 0 to 2 percent slopes	3,883	1.4
556B	High Gap silt loam, 2 to 5 percent slopes	2,084	0.8
570B	Martinsville loam, 2 to 4 percent slopes	827	0.3
570C2	Martinsville loam, 4 to 6 percent slopes, eroded	205	*
570D2	Martinsville loam, 6 to 12 percent slopes, eroded	97	*
594A	Reddick clay loam, 0 to 2 percent slopes	25,473	9.3
614A	Chenoa silty clay loam, 0 to 2 percent slopes	6,405	2.3
672A	Cresent loam, 0 to 2 percent slopes	1,187	0.4
672B	Cresent loam, 2 to 5 percent slopes	1,415	0.5
688B	Braidwood loam, 1 to 7 percent slopes	31	*
688D	Braidwood loam, 7 to 20 percent slopes	434	0.2
688G	Braidwood loam, 20 to 70 percent slopes	4,065	1.5
740A	Darroch silt loam, 0 to 2 percent slopes	8,353	3.0
741B	Oakville fine sand, 1 to 6 percent slopes	20	*
741D	Oakville fine sand, 6 to 12 percent slopes	4	*
802B	Orthents, loamy, undulating	2,585	0.9
802D	Orthents, loamy, rolling	284	0.1
817A	Channahon-Hesch fine sandy loams, 0 to 2 percent slopes	114	*
817B	Channahon-Hesch fine sandy loams, 2 to 6 percent slopes	44	*
830	Landfills	273	*
863	Pits, clay	170	*
865	Pits, gravel	333	0.1
871D	Lenzburg silty clay loam, 7 to 20 percent slopes	359	0.1
871G	Lenzburg silty clay loam, 20 to 60 percent slopes	1,060	0.4
1107A	Sawmill silty clay loam, undrained, 0 to 2 percent slopes, frequently flooded	867	0.3
3073A	Ross loam, 0 to 2 percent slopes, frequently flooded	855	0.3
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	3,077	1.1
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded	2,220	0.8
3776A	Comfrey loam, 0 to 2 percent slopes, frequently flooded	204	*
4107A	Sawmill mucky silt loam, ponded, 0 to 2 percent slopes, frequently flooded	686	0.2
4516A	Faxon mucky silt loam, ponded, 0 to 2 percent slopes	498	0.2
4904A	Muskego and Peotone soils, ponded, 0 to 2 percent slopes	343	0.1
8073A	Ross loam, 0 to 2 percent slopes, occasionally flooded	1,011	0.4
8107A	Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded	3,292	1.2
8404A	Titus silty clay loam, 0 to 2 percent slopes, occasionally flooded	332	0.1
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	2,088	0.8
8776A	Comfrey loam, 0 to 2 percent slopes, occasionally flooded	1,534	0.6
M-W	Miscellaneous water	84	*
W	Water	8,220	3.0
	Total	275,355	100.0

* Less than 0.1 percent

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland

(See text for a description of the limitations and hazards listed in this table. Only the soils that are generally available for use as cropland or pastureland are listed. Absence of an entry indicates that the soil is generally not suited to use as cropland or pastureland)

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
23A:		
Blount	Wetness, root-restrictive layer, high pH, crusting, restricted permeability	Wetness, root-restrictive layer, high pH
23B:		
Blount	Wetness, root-restrictive layer, high pH, crusting, water erosion, restricted permeability	Wetness, root-restrictive layer, high pH, water erosion
42A:		
Papineau	Wetness, root-restrictive layer, restricted permeability	Wetness, root-restrictive layer
49A:		
Watseka	Wetness, wind erosion, limited available water capacity, excessive permeability	Wetness, low pH, wind erosion, limited available water capacity, excessive permeability
69A:		
Milford	Ponding, poor tilth	Ponding, frost heave, poor tilth
88B:		
Sparta	Wind erosion, limited available water capacity, excessive permeability	Low pH, wind erosion, limited available water capacity, excessive permeability
91A:		
Swygert	Wetness, root-restrictive layer, poor tilth, high pH, restricted permeability	Wetness, root-restrictive layer, high pH, poor tilth
91B:		
Swygert	Wetness, root-restrictive layer, poor tilth, high pH, restricted permeability, water erosion	Wetness, root-restrictive layer, high pH, water erosion, poor tilth
91B2:		
Swygert	Wetness, root-restrictive layer, poor tilth, high pH, restricted permeability, water erosion	Wetness, root-restrictive layer, poor tilth, high pH, water erosion
91C2:		
Swygert	Wetness, root-restrictive layer, poor tilth, high pH, water erosion, restricted permeability	Wetness, root-restrictive layer, poor tilth, high pH, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
93C2:		
Rodman	Excess lime, crusting, water erosion, limited available water capacity, excessive permeability	Water erosion, limited available water capacity, excess lime, excessive permeability
98B:		
Ade	Wind erosion, excessive permeability	Low pH, wind erosion, excessive permeability
125A:		
Selma	Ponding	Ponding, frost heave
132A:		
Starks	Wetness, crusting	Wetness, low pH
146A:		
Elliott	Wetness, root-restrictive layer, restricted permeability	Wetness, root-restrictive layer
146B:		
Elliott	Wetness, root-restrictive layer, high pH, restricted permeability, water erosion	Wetness, root-restrictive layer, high pH, water erosion
148A:		
Proctor	No major limitations	Low pH
148B:		
Proctor	Water erosion	Low pH, water erosion
149A:		
Brenton	Wetness	Wetness
151A:		
Ridgeville	Wetness	Wetness
152A:		
Drummer	Ponding, poor tilth	Ponding, frost heave, poor tilth
184A:		
Roby	Wetness	Wetness, low pH
189A:		
Martinton	Wetness, high pH	Wetness, high pH
189B:		
Martinton	Wetness, high pH, water erosion	Wetness, high pH, water erosion
201A:		
Gilford	Ponding, excessive permeability	Ponding, frost heave, excessive permeability
223B:		
Varna	Root-restrictive layer, high pH, restricted permeability, water erosion	Root-restrictive layer, high pH, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
223B2:		
Varna	Root-restrictive layer, high pH, crusting, water erosion, restricted permeability	Root-restrictive layer, high pH, water erosion
223C2:		
Varna	Root-restrictive layer, high pH, crusting, water erosion, restricted permeability	Root-restrictive layer, high pH, water erosion
223C3:		
Varna	Root-restrictive layer, poor tilth, high pH, water erosion, restricted permeability	Root-restrictive layer, poor tilth, high pH, water erosion
228A:		
Nappanee	Wetness, root-restrictive layer, high pH, crusting, restricted permeability	Wetness, root-restrictive layer, high pH
228B:		
Nappanee	Wetness, root-restrictive layer, high pH, crusting, water erosion, restricted permeability	Wetness, root-restrictive layer, high pH, water erosion
232A:		
Ashkum	Ponding, poor tilth	Ponding, frost heave, poor tilth
235A:		
Bryce	Ponding, poor tilth, restricted permeability	Ponding, frost heave, poor tilth
241D3:		
Chatsworth	---	Root-restrictive layer, poor tilth, water erosion, limited available water capacity, low fertility, excess lime
241E3:		
Chatsworth	---	---
241F:		
Chatsworth	---	---
241G:		
Chatsworth	---	---
290B:		
Warsaw	High pH, water erosion, excessive permeability	High pH, water erosion, excessive permeability
290C2:		
Warsaw	High pH, crusting, water erosion, limited available water capacity, excessive permeability	High pH, water erosion, limited available water capacity, excessive permeability

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
293A:		
Andres	Wetness	Wetness
294A:		
Symerton	No major limitations	No major limitations
294B:		
Symerton	High pH, water erosion, restricted permeability	High pH, water erosion
294C2:		
Symerton	High pH, crusting, water erosion, restricted permeability	High pH, water erosion
298A:		
Beecher	Wetness, root-restrictive layer, high pH, restricted permeability	Wetness, root-restrictive layer, high pH
298B:		
Beecher	Wetness, root-restrictive layer, high pH, water erosion, restricted permeability	Wetness, root-restrictive layer, high pH, water erosion
315A:		
Channahon	Depth to bedrock, limited available water capacity	Depth to bedrock, limited available water capacity
315B:		
Channahon	Depth to bedrock, limited available water capacity, water erosion	Depth to bedrock, limited available water capacity, water erosion
315C2:		
Channahon	Depth to bedrock, crusting, water erosion, limited available water capacity	Depth to bedrock, water erosion, limited available water capacity
318B:		
Lorenzo	High pH, limited available water capacity, excessive permeability, water erosion	High pH, limited available water capacity, excessive permeability, water erosion
329A:		
Will	Ponding, high pH, limited available water capacity, excessive permeability, poor tilth	Ponding, high pH, limited available water capacity, frost heave, excessive permeability, poor tilth
330A:		
Peotone	Ponding, poor tilth	Ponding, frost heave, poor tilth
343A:		
Kane	Wetness, high pH, excessive permeability	Wetness, high pH, excessive permeability

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
354B:		
Hononegah	High pH, wind erosion, limited available water capacity, excessive permeability	High pH, wind erosion, limited available water capacity, excessive permeability
354D:		
Hononegah	---	High pH, wind erosion, limited available water capacity, excessive permeability
356A:		
Elpaso	Ponding, poor tilth	Ponding, frost heave, poor tilth
494B:		
Kankakee	High pH	High pH
503A:		
Rockton	Depth to bedrock, restricted permeability	Depth to bedrock
503B:		
Rockton	Depth to bedrock, limited available water capacity, restricted permeability, water erosion	Depth to bedrock, limited available water capacity, water erosion
513A:		
Granby	Ponding, limited available water capacity, excessive permeability	Ponding, limited available water capacity, frost heave, excessive permeability
516A:		
Faxon	Ponding, depth to bedrock, limited available water capacity	Ponding, depth to bedrock, limited available water capacity, frost heave
530B:		
Ozaukee	Root-restrictive layer, high pH, crusting, water erosion, restricted permeability	Root-restrictive layer, high pH, water erosion
530C2:		
Ozaukee	Root-restrictive layer, high pH, crusting, water erosion, restricted permeability	Root-restrictive layer, high pH, water erosion
530C3:		
Ozaukee	Root-restrictive layer, poor tilth, high pH, water erosion, restricted permeability	Root-restrictive layer, poor tilth, high pH, water erosion, low fertility
530D2:		
Ozaukee	Root-restrictive layer, high pH, crusting, water erosion, restricted permeability	Root-restrictive layer, high pH, water erosion
530D3:		
Ozaukee	Root-restrictive layer, poor tilth, high pH, water erosion, restricted permeability	Root-restrictive layer, poor tilth, high pH, water erosion, low fertility

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
530E2:		
Ozaukee	Root-restrictive layer, high pH, crusting, water erosion, restricted permeability	Equipment limitation, root-restrictive layer, high pH, water erosion
530F:		
Ozaukee	---	Equipment limitation, root-restrictive layer, high pH, water erosion
541B:		
Graymont	High pH, water erosion, restricted permeability	High pH, water erosion
541C2:		
Graymont	High pH, water erosion, restricted permeability	High pH, water erosion
553A:		
Bryce	Ponding, poor tilth, limited available water capacity, restricted permeability	Ponding, limited available water capacity, frost heave, poor tilth
Calamine	Ponding, depth to bedrock, poor tilth, limited available water capacity, restricted permeability	Ponding, depth to bedrock, limited available water capacity, frost heave, poor tilth
555A:		
Shadeland	Wetness, depth to bedrock	Wetness, depth to bedrock, low pH
556B:		
High Gap	Depth to bedrock, water erosion	Depth to bedrock, low pH, water erosion
570B:		
Martinsville	Water erosion	Low pH, water erosion
570C2:		
Martinsville	Water erosion	Low pH, water erosion
570D2:		
Martinsville	Water erosion	Low pH, water erosion
594A:		
Reddick	Ponding, poor tilth	Ponding, frost heave, poor tilth
614A:		
Chenoa	Wetness, poor tilth, high pH, restricted permeability	Wetness, high pH, poor tilth
672A:		
Cresent	Excessive permeability	Low pH, excessive permeability
672B:		
Cresent	Water erosion, excessive permeability	Low pH, excessive permeability, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
688B:		
Braidwood	Excess lime, crusting, water erosion	Water erosion, low fertility, excess lime
688D:		
Braidwood	---	Water erosion, low fertility, excess lime
688G:		
Braidwood	---	---
740A:		
Darroch	Wetness, high pH	Wetness, high pH
741B:		
Oakville	Wind erosion, limited available water capacity, excessive permeability	Low pH, wind erosion, limited available water capacity, low fertility, excessive permeability
741D:		
Oakville	---	Low pH, wind erosion, limited available water capacity, low fertility, excessive permeability
802B:		
Orthents, loamy	Crusting, water erosion	Water erosion
802D:		
Orthents, loamy	Crusting, water erosion	Water erosion
817A:		
Channahon	Depth to bedrock, limited available water capacity	Depth to bedrock, low pH, limited available water capacity
Hesch	Depth to bedrock, limited available water capacity	Depth to bedrock, low pH, limited available water capacity
817B:		
Channahon	Depth to bedrock, water erosion, limited available water capacity	Depth to bedrock, low pH, limited available water capacity, water erosion
Hesch	Depth to bedrock, water erosion, limited available water capacity	Depth to bedrock, low pH, limited available water capacity, water erosion
871D:		
Lenzburg	---	Water erosion, low fertility, excess lime
871G:		
Lenzburg	---	---
1107A:		
Sawmill	---	---
3073A:		
Ross	Flooding	Flooding

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
3107A:		
Sawmill	Flooding, ponding, poor tilth	Flooding, ponding, frost heave, poor tilth
3451A:		
Lawson	Flooding, wetness	Flooding, wetness
3776A:		
Comfrey	Flooding, ponding	Flooding, ponding, frost heave
4107A:		
Sawmill	---	---
4516A:		
Faxon	---	---
4904A:		
Muskego	---	---
Peotone	---	---
8073A:		
Ross	Flooding	Flooding
8107A:		
Sawmill	Flooding, ponding, poor tilth	Flooding, ponding, frost heave, poor tilth
8404A:		
Titus	Flooding, ponding, poor tilth, restricted permeability	Flooding, ponding, poor tilth, frost heave
8451A:		
Lawson	Flooding, wetness	Flooding, wetness
8776A:		
Comfrey	Flooding, ponding	Flooding, ponding, frost heave

Table 7.--Land Capability and Yields per Acre of Crops and Pasture

(Yields for corn, soybeans, winter wheat, oats, and grass-legume hay are those that can be expected under an optimum level of management. Yields for grass-legume pasture are those that can be expected under an average level of management. All yields are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
23A:							
Blount--------------	2w	125	43	52	59	4.0	5.8
23B:							
Blount--------------	2e	124	43	51	58	4.0	5.8
42A:							
Papineau------------	2w	124	41	50	58	3.8	5.7
49A:							
Watseka-------------	3s	110	37	46	55	4.0	5.8
69A:							
Milford-------------	2w	154	51	61	79	5.0	7.3
88B:							
Sparta--------------	4s	106	37	45	51	3.6	5.3
91A:							
Swygert-------------	2w	143	47	57	71	4.1	6.0
91B:							
Swygert-------------	2e	142	47	56	70	4.1	5.9
91B2:							
Swygert-------------	2e	133	44	53	66	3.8	5.5
91C2:							
Swygert-------------	3e	132	43	52	65	3.8	5.4
93C2:							
Rodman--------------	4s	90	32	34	38	3.0	4.4
98B:							
Ade-----------------	3s	121	42	51	62	3.8	5.6
125A:							
Selma---------------	2w	157	51	62	80	4.8	7.0
132A:							
Starks--------------	2w	147	46	57	76	4.6	6.8
146A:							
Elliott-------------	2w	151	50	61	78	4.5	6.7
146B:							
Elliott-------------	2e	149	50	60	77	4.5	6.6
148A:							
Proctor-------------	1	166	52	63	89	5.8	8.5

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
148B:							
Proctor	2e	164	51	62	88	5.7	8.3
149A:							
Brenton	1	176	54	67	95	5.1	7.5
151A:							
Ridgeville	2s	136	46	57	70	4.5	6.7
152A:							
Drummer	2w	175	57	66	90	5.1	7.5
184A:							
Roby	2s	131	45	52	63	4.2	6.2
189A:							
Martinton	2w	156	52	63	79	4.9	7.2
189B:							
Martinton	2e	154	51	62	78	4.9	7.1
201A:							
Gilford	2w	133	44	53	66	4.1	6.0
223B:							
Varna	2e	141	45	57	70	4.4	6.4
223B2:							
Varna	2e	135	43	55	67	4.2	6.2
223C2:							
Varna	3e	133	42	55	67	4.1	6.1
223C3:							
Varna	4e	124	39	50	62	3.8	5.5
228A:							
Nappanee	3w	104	37	41	44	3.6	5.3
228B:							
Nappanee	3e	103	37	41	44	3.6	5.2
232A:							
Ashkum	2w	154	51	59	77	4.6	6.8
235A:							
Bryce	2w	146	49	58	73	4.3	6.3
241D3:							
Chatsworth	7e	---	---	---	---	---	3.0
241E3:							
Chatsworth	7e	---	---	---	---	---	---
241F:							
Chatsworth	7e	---	---	---	---	---	---
241G:							
Chatsworth	7e	---	---	---	---	---	---

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
290B:							
Warsaw-------------	2e	144	46	57	72	4.6	6.8
290C2:							
Warsaw-------------	2e	136	43	55	69	4.3	6.4
293A:							
Andres-------------	1	166	53	64	87	4.9	7.2
294A:							
Symerton-----------	1	161	50	62	82	5.6	8.3
294B:							
Symerton-----------	2e	159	50	61	81	5.5	8.3
294C2:							
Symerton-----------	3e	150	47	58	76	5.2	7.7
298A:							
Beecher------------	2w	137	46	55	71	4.2	6.2
298B:							
Beecher------------	2e	136	46	54	70	4.2	6.1
315A:							
Channahon----------	3s	103	35	44	55	3.3	4.8
315B:							
Channahon----------	3e	102	35	44	54	3.3	4.7
315C2:							
Channahon----------	4e	95	32	40	51	3.0	4.4
318B:							
Lorenzo------------	3s	128	42	51	62	3.0	4.4
329A:							
Will---------------	2w	157	52	61	79	4.4	6.5
330A:							
Peotone------------	2w	148	49	55	70	4.5	6.7
343A:							
Kane---------------	2s	152	49	61	78	4.4	6.5
354B:							
Hononegah----------	4s	102	33	42	50	3.2	4.6
354D:							
Hononegah----------	6s	---	---	---	---	3.1	4.4
356A:							
Elpaso-------------	2w	176	57	60	92	5.2	7.7
494B:							
Kankakee-----------	2e	137	46	57	68	4.5	6.6
503A:							
Rockton------------	2s	121	41	53	68	3.5	5.2

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
503B:							
Rockton	2e	120	41	52	67	3.5	5.1
513A:							
Granby	3w	125	45	54	61	4.0	5.8
516A:							
Faxon	3w	139	46	53	73	4.1	6.0
530B:							
Ozaukee	2e	134	42	53	71	3.4	5.0
530C2:							
Ozaukee	2e	127	39	51	68	3.2	4.7
530C3:							
Ozaukee	3e	117	37	47	63	3.0	4.3
530D2:							
Ozaukee	3e	124	39	50	66	3.1	4.5
530D3:							
Ozaukee	4e	115	36	46	61	2.9	4.1
530E2:							
Ozaukee	4e	113	35	45	60	2.9	4.1
530F:							
Ozaukee	6e	---	---	---	---	2.6	3.7
536.							
Dumps							
541B:							
Graymont	2e	163	51	63	84	5.3	7.9
541C2:							
Graymont	3e	153	48	60	79	5.0	7.4
553A Bryce-Calamine	2w	140	47	56	70	4.2	6.2
555A:							
Shadeland	2w	116	38	50	63	3.8	5.7
556B:							
High Gap	2e	112	39	49	61	2.5	3.6
570B:							
Martinsville	2e	139	44	56	67	4.1	5.9
570C2:							
Martinsville	2e	132	41	54	64	3.9	5.6
570D2:							
Martinsville	3e	129	40	52	63	3.8	5.4
594A:							
Reddick	2w	159	51	60	80	4.6	6.8

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
614A:							
Chenoa--------------	2w	156	51	61	82	4.6	6.8
672A:							
Cresent-------------	1	142	46	58	75	4.2	6.2
672B:							
Cresent-------------	2e	141	46	57	74	4.2	6.1
688B:							
Braidwood-----------	2e	79	24	27	48	3.4	5.6
688D:							
Braidwood-----------	6e	---	---	---	---	3.0	5.0
688G:							
Braidwood-----------	7e	---	---	---	---	---	---
740A:							
Darroch-------------	2w	159	50	62	82	4.6	6.8
741B:							
Oakville------------	4s	95	34	42	47	3.3	4.8
741D:							
Oakville------------	6s	---	---	---	---	3.2	4.6
802B:							
Orthents, loamy-----	2e	93	32	35	55	3.7	4.7
802D:							
Orthents, loamy-----	3e	90	31	34	54	3.6	4.5
817A-----------------		114	39	48	57	2.9	4.2
Channahon-----------	3s						
Hesch---------------	2s						
817B-----------------		110	37	46	56	3.0	4.3
Channahon-----------	3e						
Hesch---------------	2e						
830.							
Landfills							
863.							
Pits, clay							
865.							
Pits, gravel							
871D:							
Lenzburg------------	6e	---	---	---	---	3.3	4.8
871G:							
Lenzburg------------	7e	---	---	---	---	---	---
1107A:							
Sawmill-------------	5w	---	---	---	---	---	---

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
3073A:							
Ross----------------	3w	147	48	58	72	4.4	6.5
3107A:							
Sawmill-------------	3w	153	49	58	78	4.7	6.9
3451A:							
Lawson--------------	3w	154	50	59	78	4.7	6.9
3776A:							
Comfrey-------------	3w	149	50	56	72	4.5	6.6
4107A:							
Sawmill-------------	7w	---	---	---	---	---	---
4516A:							
Faxon---------------	7w	---	---	---	---	---	---
4904A---------------- Muskego and Peotone	7w	---	---	---	---	---	---
8073A:							
Ross----------------	2w	163	53	64	80	4.9	7.2
8107A:							
Sawmill-------------	2w	170	54	64	87	5.2	7.7
8404A:							
Titus---------------	3w	143	47	55	68	4.4	6.5
8451A:							
Lawson--------------	2w	171	55	66	87	5.2	7.7
8776A:							
Comfrey-------------	2w	166	55	62	80	5.0	7.3

* Animal unit month: The amount of forage required to feed one mature cow, of approximately 1,000 pounds weight, with or without a calf, for 30 days.

Table 8.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
23A	Blount silt loam, 0 to 2 percent slopes (where drained)
23B	Blount silt loam, 2 to 4 percent slopes
42A	Papineau sandy loam, 0 to 2 percent slopes
69A	Milford silty clay loam, 0 to 2 percent slopes (where drained)
91A	Swygert silty clay loam, 0 to 2 percent slopes
91B	Swygert silty clay loam, 2 to 4 percent slopes
91B2	Swygert silty clay loam, 2 to 4 percent slopes, eroded
91C2	Swygert silty clay loam, 4 to 6 percent slopes, eroded
125A	Selma loam, 0 to 2 percent slopes (where drained)
132A	Starks silt loam, 0 to 2 percent slopes (where drained)
146A	Elliott silt loam, 0 to 2 percent slopes
146B	Elliott silt loam, 2 to 4 percent slopes
148A	Proctor silt loam, 0 to 2 percent slopes
148B	Proctor silt loam, 2 to 5 percent slopes
149A	Brenton silt loam, 0 to 2 percent slopes
151A	Ridgeville fine sandy loam, 0 to 2 percent slopes
152A	Drummer silty clay loam, 0 to 2 percent slopes (where drained)
184A	Roby fine sandy loam, 0 to 2 percent slopes
189A	Martinton silt loam, 0 to 2 percent slopes
189B	Martinton silt loam, 2 to 4 percent slopes
201A	Gilford fine sandy loam, 0 to 2 percent slopes (where drained)
223B	Varna silt loam, 2 to 4 percent slopes
223B2	Varna silt loam, 2 to 4 percent slopes, eroded
223C2	Varna silt loam, 4 to 6 percent slopes, eroded
228A	Nappanee silt loam, 0 to 2 percent slopes (where drained)
228B	Nappanee silt loam, 2 to 4 percent slopes
232A	Ashkum silty clay loam, 0 to 2 percent slopes (where drained)
235A	Bryce silty clay, 0 to 2 percent slopes (where drained)
290B	Warsaw loam, 2 to 4 percent slopes
290C2	Warsaw silt loam, 4 to 6 percent slopes, eroded
293A	Andres silt loam, 0 to 2 percent slopes
294A	Symerton silt loam, 0 to 2 percent slopes
294B	Symerton silt loam, 2 to 5 percent slopes
294C2	Symerton silt loam, 5 to 10 percent slopes, eroded
298A	Beecher silt loam, 0 to 2 percent slopes (where drained)
298B	Beecher silt loam, 2 to 4 percent slopes
329A	Will silty clay loam, 0 to 2 percent slopes (where drained)
330A	Peotone silty clay loam, 0 to 2 percent slopes (where drained)
343A	Kane silt loam, 0 to 2 percent slopes
356A	Elpaso silty clay loam, 0 to 2 percent slopes (where drained)
494B	Kankakee fine sandy loam, 2 to 4 percent slopes
503A	Rockton silt loam, 0 to 2 percent slopes
503B	Rockton silt loam, 2 to 4 percent slopes
516A	Faxon silt loam, 0 to 2 percent slopes (where drained)
530B	Ozaukee silt loam, 2 to 4 percent slopes
530C2	Ozaukee silt loam, 4 to 6 percent slopes, eroded
541B	Graymont silt loam, 2 to 5 percent slopes
553A	Bryce, shale substratum-Calamine silty clays, 0 to 2 percent slopes (where drained)
555A	Shadeland silt loam, 0 to 2 percent slopes (where drained)
556B	High Gap silt loam, 2 to 5 percent slopes
570B	Martinsville loam, 2 to 4 percent slopes
570C2	Martinsville loam, 4 to 6 percent slopes, eroded
594A	Reddick clay loam, 0 to 2 percent slopes (where drained)
614A	Chenoa silty clay loam, 0 to 2 percent slopes
672A	Cresent loam, 0 to 2 percent slopes
672B	Cresent loam, 2 to 5 percent slopes
688B	Braidwood loam, 1 to 7 percent slopes
740A	Darroch silt loam, 0 to 2 percent slopes

Table 8.--Prime Farmland--Continued

Map symbol	Soil name
3073A	Ross loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3776A	Comfrey loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
8073A	Ross loam, 0 to 2 percent slopes, occasionally flooded
8107A	Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8404A	Titus silty clay loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded
8776A	Comfrey loam, 0 to 2 percent slopes, occasionally flooded (where drained)

Table 9.--Hydric Soils

(Only those map units that have hydric components are listed. See text for a description of hydric qualities and definitions of the hydric criteria codes)

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria code
23A:				
Blount silt loam, 0 to 2 percent slopes	Blount	Not hydric	ground moraine, end moraine	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
23B:				
Blount silt loam, 2 to 4 percent slopes	Blount	Not hydric	ground moraine, end moraine	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
42A:				
Papineau sandy loam, 0 to 2 percent slopes	Papineau	Not hydric	ground moraine, lake plain	---
	Bryce	Hydric	ground moraine, glacial lake (relict)	2B3
	Selma	Hydric	outwash plain, stream terrace	2B3
49A:				
Watseka loamy fine sand, 0 to 2 percent slopes	Watseka	Not hydric	stream terrace, outwash plain	---
	Granby	Hydric	outwash plain, lake terrace	2B3
69A:				
Milford silty clay loam, 0 to 2 percent slopes	Milford	Hydric	lake plain	2B3
88B:				
Sparta loamy fine sand, 1 to 6 percent slopes	Sparta	Not hydric	outwash plain, stream terrace	---
	Gilford	Hydric	outwash plain	2B3
	Granby	Hydric	outwash plain, lake terrace	2B3
91A:				
Swygert silty clay loam, 0 to 2 percent slopes	Swygert	Not hydric	ground moraine, end moraine	---
	Bryce	Hydric	ground moraine, glacial lake (relict)	2B3
91B:				
Swygert silty clay loam, 2 to 4 percent slopes	Swygert	Not hydric	ground moraine, end moraine	---
	Bryce	Hydric	ground moraine, glacial lake (relict)	2B3
91B2:				
Swygert silty clay loam, 2 to 4 percent slopes, eroded	Swygert	Not hydric	ground moraine, end moraine	---
	Bryce	Hydric	ground moraine, glacial lake (relict)	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria code
91C2:				
Swygert silty clay loam, 4 to 6 percent slopes, eroded	Swygert	Not hydric	ground moraine, end moraine	---
	Bryce	Hydric	ground moraine, glacial lake (relict)	2B3
93C2:				
Rodman gravelly loam, 4 to 6 percent slopes, eroded	Rodman	Not hydric	end moraine, outwash plain	---
	Will	Hydric	outwash plain, stream terrace	2B3
98B:				
Ade loamy fine sand, 1 to 6 percent slopes	Ade	Not hydric	outwash plain, stream terrace	---
	Gilford	Hydric	outwash plain	2B3
125A:				
Selma loam, 0 to 2 percent slopes	Selma	Hydric	outwash plain, stream terrace	2B3
132A:				
Starks silt loam, 0 to 2 percent slopes	Starks	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, stream terrace	2B3
146A:				
Elliott silt loam, 0 to 2 percent slopes	Elliott	Not hydric	ground moraine, end moraine	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
146B:				
Elliott silt loam, 2 to 4 percent slopes	Elliott	Not hydric	ground moraine, end moraine	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
148A:				
Proctor silt loam, 0 to 2 percent slopes	Proctor	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, stream terrace	2B3
148B:				
Proctor silt loam, 2 to 5 percent slopes	Proctor	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, stream terrace	2B3
149A:				
Brenton silt loam, 0 to 2 percent slopes	Brenton	Not hydric	outwash plain, stream terrace	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
151A:				
Ridgeville fine sandy loam, 0 2 percent slopes	Ridgeville	Not hydric	outwash plain, stream terrace	---
	Gilford	Hydric	outwash plain	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria code
152A:				
Drummer silty clay loam, 0 to 2 percent slopes	Drummer	Hydric	outwash plain, ground moraine	2B3
184A:				
Roby fine sandy loam, 0 to 2 percent slopes	Roby	Not hydric	outwash plain, stream terrace	---
	Gilford	Hydric	outwash plain	2B3
189A:				
Martinton silt loam, 0 to 2 percent slopes	Martinton	Not hydric	lake plain	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
	Milford	Hydric	lake plain	2B3
189B:				
Martinton silt loam, 2 to 4 percent slopes	Martinton	Not hydric	lake plain	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
	Milford	Hydric	lake plain	2B3
201A:				
Gilford fine sandy loam, 0 to 2 percent slopes	Gilford	Hydric	outwash plain	2B3
223B:				
Varna silt loam, 2 to 4 percent slopes	Varna	Not hydric	ground moraine, end moraine	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
223B2:				
Varna silt loam, 2 to 4 percent slopes, eroded	Varna	Not hydric	ground moraine, end moraine	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
223C2:				
Varna silt loam, 4 to 6 percent slopes, eroded	Varna	Not hydric	ground moraine, end moraine	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
223C3:				
Varna silty clay loam, 4 to 6 percent slopes, severely eroded	Varna	Not hydric	ground moraine, end moraine	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
228A:				
Nappanee silt loam, 0 to 2 percent slopes	Nappanee	Not hydric	ground moraine, end moraine	---
	Bryce	Hydric	ground moraine, glacial lake (relict)	2B3
228B:				
Nappanee silt loam, 2 to 4 percent slopes	Nappanee	Not hydric	ground moraine, end moraine	---
	Bryce	Hydric	ground moraine, glacial lake (relict)	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria code
232A:				
Ashkum silty clay loam, 0 to 2 percent slopes	Ashkum	Hydric	ground moraine, end moraine	2B3
235A:				
Bryce silty clay, 0 to 2 percent slopes	Bryce	Hydric	ground moraine, glacial lake (relict)	2B3
241D3:				
Chatsworth silty clay, 6 to 12 percent slopes, severely eroded	Chatsworth	Not hydric	ground moraine, end moraine	---
	Bryce	Hydric	ground moraine, glacial lake (relict)	2B3
290B:				
Warsaw loam, 2 to 4 percent slopes	Warsaw	Not hydric	outwash plain, stream terrace, kame	---
	Will	Hydric	outwash plain, stream terrace, kame	2B3
290C2:				
Warsaw silt loam, 4 to 6 percent slopes, eroded	Warsaw	Not hydric	outwash plain, stream terrace	---
	Will	Hydric	outwash plain, stream terrace	2B3
293A:				
Andres silt loam, 0 to 2 percent slopes	Andres	Not hydric	ground moraine lake plain	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
	Reddick	Hydric	ground moraine, lake plain	2B3
294A:				
Symerton silt loam, 0 to 2 percent slopes	Symerton	Not hydric	ground moraine, lake plain	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
	Reddick	Hydric	ground moraine, lake plain	2B3
294B:				
Symerton silt loam, 2 to 5 percent slopes	Symerton	Not hydric	ground moraine, lake plain	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
	Reddick	Hydric	ground moraine, lake plain	2B3
294C2:				
Symerton silt loam, 5 to 10 percent slopes, eroded	Symerton	Not hydric	ground moraine, lake plain	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
	Reddick	Hydric	ground moraine, lake plain	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria code
298A:				
Beecher silt loam, 0 to 2 percent slopes	Beecher	Not hydric	ground moraine, end moraine	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
298B:				
Beecher silt loam, 2 to 4 percent slopes	Beecher	Not hydric	ground moraine, end moraine	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
315A:				
Channahon silt loam, 0 to 2 percent slopes	Channahon	Not hydric	outwash plain, stream terrace	---
	Faxon	Hydric	outwash plain, stream terrace	2B3
315B:				
Channahon silt loam, 2 to 4 percent slopes	Channahon	Not hydric	outwash plain, stream terrace	---
	Faxon	Hydric	outwash plain, stream terrace	2B3
315C2:				
Channahon silt loam, 4 to 6 percent slopes, eroded	Channahon	Not hydric	outwash plain, stream terrace	---
	Faxon	Hydric	outwash plain, stream terrace	2B3
318B:				
Lorenzo loam, 2 to 4 percent slopes	Lorenzo	Not hydric	outwash plain, stream terrace	---
	Will	Hydric	outwash plain, stream terrace	2B3
329A:				
Will silty clay loam, 0 to 2 percent slopes	Will	Hydric	outwash plain, stream terrace	2B3
330A:				
Peotone silty clay loam, 0 to 2 percent slopes	Peotone	Hydric	ground moraine	2B3
343A:				
Kane silt loam, 0 to 2 percent slopes	Kane	Not hydric	outwash plain, stream terrace	---
	Will	Hydric	outwash plain, stream terrace	2B3
356A:				
Elpaso silty clay loam, 0 to 2 percent slopes	Elpaso	Hydric	ground moraine, end moraine	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria code
494B:				
Kankakee fine sandy loam, 2 to 4 percent slopes	Kankakee	Not hydric	outwash plain, stream terrace	---
	Gilford	Hydric	outwash plain	2B3
	Will	Hydric	outwash plain, stream terrace	2B3
503A:				
Rockton silt loam, 0 to 2 percent slopes	Rockton	Not hydric	ground moraine, outwash plain	---
	Faxon	Hydric	outwash plain, stream terrace	2B3
503B:				
Rockton silt loam, 2 to 4 percent slopes	Rockton	Not hydric	ground moraine, outwash plain	---
	Faxon	Hydric	outwash plain, stream terrace	2B3
513A:				
Granby fine sandy loam, 0 to 2 percent slopes	Granby	Hydric	outwash plain, lake terrace	2B3
516A:				
Faxon silt loam, 0 to 2 percent slopes	Faxon	Hydric	outwash plain, stream terrace	2B3
530B:				
Ozaukee silt loam, 2 to 4 percent slopes	Ozaukee	Not hydric	ground moraine, end moraine	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
530C2:				
Ozaukee silt loam, 4 to 6 percent slopes, eroded	Ozaukee	Not hydric	end moraine, end moraine	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
530C3:				
Ozaukee silty clay loam, 4 to 6 percent slopes, severely eroded	Ozaukee	Not hydric	end moraine, ground moraine	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
530D2:				
Ozaukee silt loam, 6 to 12 percent slopes, eroded	Ozaukee	Not hydric	end moraine, ground moraine	---
	Ashkum	Hydric	ground moraine, end moraine	2B3
530D3:				
Ozaukee silty clay loam, 6 to 12 percent slopes, severely eroded	Ozaukee	Not hydric	end moraine, ground moraine	---
	Ashkum	Hydric	ground moraine, end moraine	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria code
541B:				
Graymont silt loam, 2 to 5 percent slopes	Graymont	Not hydric	ground moraine, end moraine	---
	Elpaso	Hydric	ground moraine, end moraine	2B3
541C2:				
Graymont silt loam, 5 to 10 percent slopes, eroded	Graymont	Not hydric	end moraine, ground moraine	---
	Elpaso	Hydric	ground moraine, end moraine	2B3
553A:				
Bryce, shale substratum-Calamine silty clays, 0 to 2 percent slopes	Bryce	Hydric	stream terrace, lake plain	2B3
	Calamine	Hydric	stream terrace, lake plain	2B3
555A:				
Shadeland silt loam, 0 to 2 percent slopes	Shadeland	Not hydric	stream terrace, outwash plain	---
	Bryce	Hydric	stream terrace, lake plain	2B3
	Calamine	Hydric	stream terrace, lake plain	2B3
556B:				
High Gap silt loam, 2 to 5 percent slopes	High Gap	Not hydric	stream terrace, outwash plain	---
	Bryce	Hydric	stream terrace, lake plain	2B3
	Calamine	Hydric	stream terrace, lake plain	2B3
570B:				
Martinsville loam, 2 to 4 percent slopes	Martinsville	Not hydric	outwash plain, stream terrace	---
	Selma	Hydric	outwash plain, stream terrace	2B3
570C2:				
Martinsville loam, 4 to 6 percent slopes, eroded	Martinsville	Not hydric	outwash plain, stream terrace	---
	Selma	Hydric	outwash plain, stream terrace	2B3
594A:				
Reddick clay loam, 0 to 2 percent slopes	Reddick	Hydric	ground moraine, lake plain plain	2B3
614A:				
Chenoa silty clay loam, 0 to 2 percent slopes	Chenoa	Not hydric	ground moraine, end moraine	---
	Elpaso	Hydric	ground moraine, end moraine	2B3
672A:				
Cresent loam, 0 to 2 percent slopes	Cresent	Not hydric	outwash plain, stream terrace	---
	Selma	Hydric	outwash plain, stream terrace	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria code
672B:				
Cresent loam, 2 to 5 percent slopes	Cresent	Not hydric	outwash plain, stream terrace	---
	Selma	Hydric	outwash plain, stream terrace	2B3
740A:				
Darroch silt loam, 0 to 2 percent slopes	Darroch	Not hydric	outwash plain	---
	Selma	Hydric	outwash plain, stream terrace	2B3
741B:				
Oakville fine sand, 1 to 6 percent slopes	Oakville	Not hydric	outwash plain	---
	Granby	Hydric	outwash plain, lake terrace	2B3
802B:				
Orthents, loamy, undulating	Orthents, loamy	Not hydric	outwash plain, ground moraine	---
	Drummer	Hydric	outwash plain, stream terrace	2B3
	Elpaso	Hydric	ground moraine, end moraine	2B3
802D:				
Orthents, loamy, rolling	Orthents, loamy	Not hydric	ground moraine, outwash plain	---
	Drummer	Hydric	outwash plain, ground moraine	2B3
	Elpaso	Hydric	ground moraine, end moraine	2B3
817A:				
Channahon-Hesch fine sandy loams, 0 to 2 percent slopes	Channahon	Not hydric	stream terrace, flood-plain step, outwash plain	---
	Hesch	Not hydric	stream terrace, flood-plain step, outwash plain	---
	Faxon	Hydric	outwash plain, stream terrace	2B3
	Peotone	Hydric	ground moraine	2B3
817B:				
Channahon-Hesch fine sandy loams, 2 to 6 percent slopes	Channahon	Not hydric	stream terrace, flood-plain step, outwash plain	---
	Hesch	Not hydric	stream terrace, flood-plain step, outwash plain	---
	Faxon	Hydric	outwash plain, stream terrace	2B3
	Peotone	Hydric	ground moraine	2B3
865:				
Pits, gravel	Pits, gravel	N/A	---	---
	Drummer	Hydric	outwash plain, stream terrace	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform	Hydric criteria code
1107A:				
Sawmill silty clay loam, undrained, 0 to 2 percent slopes, frequently flooded	Sawmill	Hydric	flood plain	2B3,3
3073A:				
Ross loam, 0 to 2 percent slopes, frequently flooded	Ross	Not hydric	flood plain	---
	Comfrey	Hydric	flood plain	2B3
3107A:				
Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	Sawmill	Hydric	flood plain	2B3
3451A:				
Lawson silt loam, 0 to 2 percent slopes, frequently flooded	Lawson	Not hydric	flood plain	---
	Sawmill	Hydric	flood plain	2B3
3776A:				
Comfrey loam, 0 to 2 percent slopes, frequently flooded	Comfrey	Hydric	flood plain	2B3
4107A:				
Sawmill mucky silt loam, ponded, 0 to 2 percent slopes, frequently flooded	Sawmill	Hydric	flood plain	2B3,3,4
	Muskego	Hydric	depression	1,3
4516A:				
Faxon mucky silt loam, ponded, 0 to 2 percent slopes	Faxon	Hydric	outwash plain, stream terrace	2B3,3
	Muskego	Hydric	depression, ground moraine	1,3
4904A:				
Muskego and Peotone soils, ponded, 0 to 2 percent slopes	Muskego	Hydric	depression, ground moraine	1,3
	Peotone	Hydric	depression, ground moraine	2B3,3
8073A:				
Ross loam, 0 to 2 percent slopes, occasionally flooded	Ross	Not hydric	flood plain	---
	Comfrey	Hydric	flood plain	2B3
	Sawmill	Hydric	flood plain	2B3
8107A:				
Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded	Sawmill	Hydric	flood plain	2B3
8404A:				
Titus silty clay loam, 0 to 2 percent slopes, occasionally flooded	Titus	Hydric	flood plain	2B3
8451A:				
Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	Lawson	Not hydric	flood plain	---
	Sawmill	Hydric	flood plain	2B3
8776A:				
Comfrey loam, 0 to 2 percent slopes, occasionally flooded	Comfrey	Hydric	flood plain	2B3

Table 10.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees generally do not grow to the given height)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
23A:					
Blount	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
23B:					
Blount	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
42A:					
Papineau	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
49A:					
Watseka	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
69A:					
Milford	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
88B:					
Sparta	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
91A: Swygert	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
91B: Swygert	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
91B2: Swygert	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
91C2:					
Swygert	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
93C2:					
Rodman	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak	---	---
98B:					
Ade	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
125A: Selma	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
132A: Starks	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
146A: Elliott	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
146B:					
Elliott	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
148A:					
Proctor	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
148B:					
Proctor	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
149A:					
Brenton	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
151A:					
Ridgeville	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
152A:					
Drummer	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
184A:					
Roby	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
189A:					
Martinton	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
189B:					
Martinton	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
201A:					
Gilford	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
223B:					
Varna	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
223B2:					
Varna	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
223C2:					
Varna	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
223C3:					
Varna	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
228A:					
Nappanee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
228B:					
Nappanee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
232A:					
Ashkum	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
235A:					
Bryce	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
241D3:					
Chatsworth	Coralberry, mapleleaf viburnum, redosier dogwood, roughleaf dogwood	American cranberrybush, Ohio buckeye, bitternut hickory, bur oak, chinkapin oak, cockspur hawthorn, common chokecherry, eastern redcedar	Austrian pine, common hackberry	Carolina poplar	---
241E3:					
Chatsworth	Coralberry, mapleleaf viburnum, redosier dogwood, roughleaf dogwood	American cranberrybush, Ohio buckeye, bitternut hickory, bur oak, chinkapin oak, cockspur hawthorn, common chokecherry, eastern redcedar	Austrian pine, common hackberry	Carolina poplar	---
241F:					
Chatsworth	Coralberry, mapleleaf viburnum, redosier dogwood, roughleaf dogwood	American cranberrybush, Ohio buckeye, bitternut hickory, bur oak, chinkapin oak, cockspur hawthorn, common chokecherry, eastern redcedar	Austrian pine, common hackberry	Carolina poplar	---
241G:					
Chatsworth	Coralberry, mapleleaf viburnum, redosier dogwood, roughleaf dogwood	American cranberrybush, Ohio buckeye, bitternut hickory, bur oak, chinkapin oak, cockspur hawthorn, common chokecherry, eastern redcedar	Austrian pine, common hackberry	Carolina poplar	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
290B:					
Warsaw	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
290C2:					
Warsaw	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
293A:					
Andres	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
294A:					
Symerton	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
294B:					
Symerton	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
294C2:					
Symerton	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
298A:					
Beecher	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
298B: Beecher	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
315A: Channahon	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak	---	---
315B: Channahon	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak	---	---
315C2: Channahon	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak	---	---
318B: Lorenzo	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
329A:					
Will	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
330A:					
Peotone	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
343A:					
Kane	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
354B:					
Hononegah	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine
354D:					
Hononegah	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine
356A:					
Elpaso	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
494B:					
Kankakee	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
503A:					
Rockton	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
503B:					
Rockton	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
513A:					
Granby	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
516A:					
Faxon	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
530B:					
Ozaukee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
530C2:					
Ozaukee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
530C3:					
Ozaukee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
530D2:					
Ozaukee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
530D3:					
Ozaukee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
530E2:					
Ozaukee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
530F:					
Ozaukee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
536.					
Dumps					
541B:					
Graymont	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
541C2:					
Graymont	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
553A:					
Bryce	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
Calamine	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
555A:					
Shadeland	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
556B:					
High Gap	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
570B:					
Martinsville	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
570C2:					
Martinsville	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
570D2:					
Martinsville	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
594A:					
Reddick	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
614A:					
Chenoa	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
672A: Cresent	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
672B: Cresent	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
688B: Braidwood	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
688D:					
Braidwood	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine
688G:					
Braidwood	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine
740A:					
Darroch	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
741B:					
Oakville	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine
741D:					
Oakville	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine
802B:					
Orthents, loamy	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
802D:					
Orthents, loamy	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
817A:					
Channahon	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak	---	---
Hesch	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
817B:					
Channahon	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak	---	---
Hesch	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
830. Landfills					
863. Pits, clay					
865. Pits, gravel					
871D:					
Lenzburg	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak	---	---
871G:					
Lenzburg	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak	---	---
1107A:					
Sawmill	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
3073A:					
Ross	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
3107A:					
Sawmill	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
3451A:					
Lawson	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
3776A:					
Comfrey	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
4107A. Sawmill					
4516A. Faxon					
4904A:					
Muskego.					
Peotone.					
8073A:					
Ross	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
8107A:					
Sawmill	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweet gum	Carolina poplar, eastern cottonwood, pin oak
8404A:					
Titus	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8451A:					
Lawson	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
8776A:					
Comfrey	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 11.--Forestland Harvest Equipment Considerations

(Only the soils that are commonly used as forestland are listed. See text for a description of the considerations listed in this table)

Map symbol and soil name	Forestland harvest equipment considerations
23A:	
Blount	Wetness Susceptible to rutting and wheel slippage
23B:	
Blount	Wetness Susceptible to rutting and wheel slippage
88B:	
Sparta	Poor traction (loose sandy material)
93C2:	
Rodman	No major considerations
132A:	
Starks	Wetness Susceptible to rutting and wheel slippage
184A:	
Roby	Wetness Susceptible to rutting and wheel slippage Poor traction (loose sandy material)
228A:	
Nappanee	Wetness Susceptible to rutting and wheel slippage
228B:	
Nappanee	Wetness Susceptible to rutting and wheel slippage
241F:	
Chatsworth	Slope Wetness Susceptible to rutting and wheel slippage
241G:	
Chatsworth	Slope Wetness Susceptible to rutting and wheel slippage
298A:	
Beecher	Wetness Susceptible to rutting and wheel slippage
298B:	
Beecher	Wetness Susceptible to rutting and wheel slippage
315A:	
Channahon	Susceptible to rutting and wheel slippage
315B:	
Channahon	Susceptible to rutting and wheel slippage
315C2:	
Channahon	Susceptible to rutting and wheel slippage

Table 11.--Forestland Harvest Equipment Considerations--Continued

Map symbol and soil name	Forestland harvest equipment considerations
530B:	
Ozaukee	Wetness Susceptible to rutting and wheel slippage
530C2:	
Ozaukee	Wetness Susceptible to rutting and wheel slippage
530C3:	
Ozaukee	Wetness Susceptible to rutting and wheel slippage
530D2:	
Ozaukee	Wetness Susceptible to rutting and wheel slippage
530D3:	
Ozaukee	Wetness Susceptible to rutting and wheel slippage
530E2:	
Ozaukee	Slope Wetness Susceptible to rutting and wheel slippage
530F:	
Ozaukee	Slope Wetness Susceptible to rutting and wheel slippage
555A:	
Shadeland	Wetness Susceptible to rutting and wheel slippage
556B:	
High Gap	Wetness Susceptible to rutting and wheel slippage
570B:	
Martinsville	Susceptible to rutting and wheel slippage
570C2:	
Martinsville	Susceptible to rutting and wheel slippage
570D2:	
Martinsville	Susceptible to rutting and wheel slippage
688B:	
Braidwood	Susceptible to rutting and wheel slippage
688D:	
Braidwood	Slope Susceptible to rutting and wheel slippage
688G:	
Braidwood	Slope Susceptible to rutting and wheel slippage
741B:	
Oakville	Poor traction (loose sandy material)
741D:	
Oakville	Poor traction (loose sandy material)

Table 11.--Forestland Harvest Equipment Considerations--Continued

Map symbol and soil name	Forestland harvest equipment considerations
817A:	
Channahon	No major considerations
Hesch	No major considerations
817B:	
Channahon	No major considerations
Hesch	No major considerations
871D:	
Lenzburg	Slope Susceptible to rutting and wheel slippage
871G:	
Lenzburg	Slope Susceptible to rutting and wheel slippage
1107A:	
Sawmill	Flooding Wetness Susceptible to rutting and wheel slippage
3073A:	
Ross	Flooding Susceptible to rutting and wheel slippage
3107A:	
Sawmill	Flooding Wetness Susceptible to rutting and wheel slippage
3451A:	
Lawson	Flooding Wetness Susceptible to rutting and wheel slippage
3776A:	
Comfrey	Flooding Wetness Susceptible to rutting and wheel slippage
8073A:	
Ross	Susceptible to rutting and wheel slippage
8107A:	
Sawmill	Wetness Susceptible to rutting and wheel slippage
8404A:	
Titus	Wetness Susceptible to rutting and wheel slippage
8451A:	
Lawson	Wetness Susceptible to rutting and wheel slippage
8776A:	
Comfrey	Wetness Susceptible to rutting and wheel slippage

Table 12.--Forestland Haul Road and Log Landing Considerations

(Only the soils that are commonly used as forestland are listed. See text for a description of the considerations listed in this table)

Map symbol and soil name	Haul road considerations	Log landing considerations
23A:		
Blount	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
23B:		
Blount	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
88B:		
Sparta	No major considerations	No major considerations
93C2:		
Rodman	No major considerations	No major considerations
132A:		
Starks	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
184A:		
Roby	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
228A:		
Nappanee	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
228B:		
Nappanee	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
241F:		
Chatsworth	Slope Wetness Low bearing strength	Slope Wetness Susceptible to rutting and wheel slippage
241G:		
Chatsworth	Slope Wetness Low bearing strength	Slope Wetness Susceptible to rutting and wheel slippage
298A:		
Beecher	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
298B:		
Beecher	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
315A:		
Channahon	Depth to hard bedrock Low bearing strength	Susceptible to rutting and wheel slippage
315B:		
Channahon	Depth to hard bedrock Low bearing strength	Susceptible to rutting and wheel slippage
315C2:		
Channahon	Depth to hard bedrock Low bearing strength	Susceptible to rutting and wheel slippage

Table 12.--Forestland Haul Road and Log Landing Considerations--Continued

Map symbol and soil name	Haul road considerations	Log landing considerations
530B:		
Ozaukee	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
530C2:		
Ozaukee	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
530C3:		
Ozaukee	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
530D2:		
Ozaukee	Slope Wetness Low bearing strength	Slope Wetness Susceptible to rutting and wheel slippage
530D3:		
Ozaukee	Slope Wetness Low bearing strength	Slope Wetness Susceptible to rutting and wheel slippage
530E2:		
Ozaukee	Slope Wetness Low bearing strength	Slope Wetness Susceptible to rutting and wheel slippage
530F:		
Ozaukee	Slope Wetness Low bearing strength	Slope Wetness Susceptible to rutting and wheel slippage
555A:		
Shadeland	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
556B:		
High Gap	Wetness Low bearing strength	Wetness Susceptible to rutting and wheel slippage
570B:		
Martinsville	Low bearing strength	Susceptible to rutting and wheel slippage
570C2:		
Martinsville	Low bearing strength	Susceptible to rutting and wheel slippage
570D2:		
Martinsville	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
688B:		
Braidwood	Low bearing strength	Susceptible to rutting and wheel slippage
688D:		
Braidwood	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
688G:		
Braidwood	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage

Table 12.--Forestland Haul Road and Log Landing Considerations--Continued

Map symbol and soil name	Haul road considerations	Log landing considerations
741B:		
Oakville	No major considerations	No major considerations
741D:		
Oakville	Slope	Slope
817A:		
Channahon	Depth to soft bedrock	No major considerations
Hesch	No major considerations	No major considerations
817B:		
Channahon	Depth to soft bedrock	No major considerations
Hesch	No major considerations	No major considerations
871D:		
Lenzburg	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
871G:		
Lenzburg	Slope Low bearing strength	Slope Susceptible to rutting and wheel slippage
1107A:		
Sawmill	Flooding Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
3073A:		
Ross	Flooding Low bearing strength	Flooding Susceptible to rutting and wheel slippage
3107A:		
Sawmill	Flooding Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
3451A:		
Lawson	Flooding Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
3776A:		
Comfrey	Flooding Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
8073A:		
Ross	Low bearing strength	Flooding Susceptible to rutting and wheel slippage
8107A:		
Sawmill	Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
8404A:		
Titus	Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage

Table 12.--Forestland Haul Road and Log Landing Considerations--Continued

Map symbol and soil name	Haul road considerations	Log landing considerations
8451A:		
Lawson	Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage
8776A:		
Comfrey	Wetness Low bearing strength	Flooding Wetness Susceptible to rutting and wheel slippage

Table 13.--Forestland Site Preparation and Planting Considerations

(Only the soils that are commonly used as forestland are listed. See text for a description of the considerations listed in this table)

Map symbol and soil name	Forestland site preparation and planting considerations
23A:	
Blount	Wetness Potential poor tilth and compaction
23B:	
Blount	Wetness Potential poor tilth and compaction
88B:	
Sparta	No major considerations
93C2:	
Rodman	No major considerations
132A:	
Starks	Wetness Potential poor tilth and compaction
184A:	
Roby	Wetness
228A:	
Nappanee	Wetness Potential poor tilth and compaction
228B:	
Nappanee	Wetness Potential poor tilth and compaction
241F:	
Chatsworth	Slope Wetness Water erosion Potential poor tilth and compaction
241G:	
Chatsworth	Slope Wetness Water erosion Potential poor tilth and compaction
298A:	
Beecher	Wetness Potential poor tilth and compaction
298B:	
Beecher	Wetness Potential poor tilth and compaction
315A:	
Channahon	Depth to hard bedrock Potential poor tilth and compaction
315B:	
Channahon	Depth to hard bedrock
315C2:	
Channahon	Depth to hard bedrock Potential poor tilth and compaction

Table 13.--Forestland Site Preparation and Planting Considerations--Continued

Map symbol and soil name	Forestland site preparation and planting considerations
530B:	
Ozaukee	Wetness Potential poor tilth and compaction
530C2:	
Ozaukee	Wetness Potential poor tilth and compaction
530C3:	
Ozaukee	Wetness Potential poor tilth and compaction
530D2:	
Ozaukee	Wetness Water erosion Potential poor tilth and compaction
530D3:	
Ozaukee	Wetness Water erosion Potential poor tilth and compaction
530E2:	
Ozaukee	Slope Wetness Water erosion Potential poor tilth and compaction
530F:	
Ozaukee	Slope Wetness Water erosion Potential poor tilth and compaction
555A:	
Shadeland	Wetness Potential poor tilth and compaction
556B:	
High Gap	Wetness Potential poor tilth and compaction
570B:	
Martinsville	No major considerations
570C2:	
Martinsville	No major considerations
570D2:	
Martinsville	Water erosion
688B:	
Braidwood	Potential poor tilth and compaction
688D:	
Braidwood	Slope Water erosion Potential poor tilth and compaction

Table 13.--Forestland Site Preparation and Planting Considerations--Continued

Map symbol and soil name	Forestland site preparation and planting considerations
688G:	
Braidwood	Slope Water erosion Potential poor tilth and compaction
741B:	
Oakville	No major considerations
741D:	
Oakville	Water erosion
817A:	
Channahon	No major considerations
Hesch	No major considerations
817B:	
Channahon	No major considerations
Hesch	No major considerations
871D:	
Lenzburg	Slope Water erosion Potential poor tilth and compaction
871G:	
Lenzburg	Slope Water erosion Potential poor tilth and compaction
1107A:	
Sawmill	Flooding Wetness
3073A:	
Ross	Flooding
3107A:	
Sawmill	Flooding Wetness
3451A:	
Lawson	Flooding Wetness
3776A:	
Comfrey	Flooding Wetness Potential poor tilth and compaction
8073A:	
Ross	No major considerations
8107A:	
Sawmill	Wetness
8404A:	
Titus	Wetness

Table 13.--Forestland Site Preparation and Planting Considerations--Continued

Map symbol and soil name	Forestland site preparation and planting considerations
8451A:	
Lawson	Wetness
8776A:	
Comfrey	Wetness Potential poor tilth and compaction

Table 14.--Forestland Productivity

(Only the soils commonly used as forestland are listed. See text for definitions of terms used in this table)

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/acre	
23A				
Blount	Northern red oak	57	43	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	Sugar maple	54	29	
	White oak	57	43	
23B:				
Blount	Northern red oak	57	43	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	Sugar maple	54	29	
	White oak	57	43	
88B:				
Sparta	Northern red oak	70	57	Common hackberry, eastern redcedar, eastern white pine, red maple.
	Jack pine	---	---	
	White oak	---	---	
	Eastern white pine	---	---	
93C2:				
Rodman	Northern red oak	45	29	Bur oak, chinkapin oak, eastern redcedar.
	Red pine	---	---	
	Shagbark hickory	---	---	
	White oak	---	---	
132A:				
Starks	Northern red oak	80	57	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
	White oak	80	57	
	Black walnut	---	---	
184A:				
Roby	Northern red oak	80	57	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
	White oak	80	57	
	Black walnut	---	---	
228A:				
Nappanee	Pin oak	85	72	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	White oak	75	72	
	American sycamore	---	---	
	Northern red oak	---	---	
	Shagbark hickory	---	---	
228B:				
Nappanee	Pin oak	85	72	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	White oak	75	72	
	American sycamore	---	---	
	Northern red oak	---	---	
	Shagbark hickory	---	---	
241F:				
Chatsworth	Northern red oak	66	57	Austrian pine, bitternut hickory, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	American basswood	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
241G:				
Chatsworth	Northern red oak	66	57	Austrian pine, bitternut hickory, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	American basswood	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	

Table 14.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/acre	
298A:				
Beecher	Northern red oak	65	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	Black cherry	---	---	
	Bur oak	---	---	
	Northern pin oak	---	---	
	Shagbark hickory	---	---	
	White oak	---	---	
298B:				
Beecher	Northern red oak	65	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	Black cherry	---	---	
	Bur oak	---	---	
	Northern pin oak	---	---	
	Shagbark hickory	---	---	
	White oak	---	---	
315A:				
Channahon	Northern red oak	55	43	Bur oak, chinkapin oak, eastern redcedar.
	Sugar maple	---	---	
	White oak	---	---	
	American basswood	---	---	
315B:				
Channahon	Northern red oak	55	43	Bur oak, chinkapin oak, eastern redcedar.
	Sugar maple	---	---	
	White oak	---	---	
	American basswood	---	---	
315C2:				
Channahon	Northern red oak	55	43	Bur oak, chinkapin oak, eastern redcedar.
	Sugar maple	---	---	
	White oak	---	---	
	American basswood	---	---	
530B:				
Ozaukee	Northern red oak	66	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	American basswood	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
530C2:				
Ozaukee	Northern red oak	66	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	American basswood	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
530C3:				
Ozaukee	Northern red oak	66	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	American basswood	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
530D2:				
Ozaukee	Northern red oak	66	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	American basswood	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
530D3:				
Ozaukee	American basswood	---	---	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	Northern red oak	66	57	
	Shagbark hickory	---	---	
	Sugar maple	---	---	

Table 14.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/acre	
530E2:				
Ozaukee	Northern red oak	66	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	American basswood	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
530F:				
Ozaukee	Northern red oak	66	57	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	American basswood	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
555A:				
Shadeland	Pin oak	85	72	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
	Sweetgum	80	86	
	Tuliptree	85	86	
	White oak	75	57	
556B:				
High Gap	Virginia pine	55	86	Black oak, common hackberry, eastern white pine.
	Tuliptree	75	57	
	White oak	75	57	
570B:				
Martinsville	White oak	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	Northern red oak	80	57	
570C2:				
Martinsville	White oak	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	Northern red oak	80	57	
570D2:				
Martinsville	White oak	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	Northern red oak	80	57	
688B:				
Braidwood	Black walnut	73	---	Common hackberry, eastern redcedar, eastern white pine, red maple.
	Eastern cottonwood	---	---	
688D:				
Braidwood	Black walnut	73	---	Common hackberry, eastern redcedar, eastern white pine, red maple.
	Eastern cottonwood	---	---	
688G:				
Braidwood	Black walnut	73	---	Common hackberry, eastern redcedar, eastern white pine, red maple.
	Eastern cottonwood	---	---	
741B:				
Oakville	Eastern white pine	85	200	Common hackberry, eastern redcedar, eastern white pine, red maple.
	Jack pine	68	100	
	Red pine	78	143	
	White oak	70	57	

Table 14.--Forestland Productivity--Continued

Map symbol and soil name	Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/acre	
741D:				
Oakville	Eastern white pine	85	200	Common hackberry, eastern redcedar, eastern white pine, red maple.
	Jack pine	68	100	
	Red pine	78	143	
	White oak	70	57	
817A:				
Channahon	American basswood	---	---	Bur oak, chinkapin oak, eastern redcedar.
	Northern red oak	55	43	
	Sugar maple	---	---	
	White oak	---	---	
Hesch.				
817B:				
Channahon	American basswood	---	---	Bur oak, chinkapin oak, eastern redcedar.
	Northern red oak	55	43	
	Sugar maple	---	---	
	White oak	---	---	
Hesch.				
871D:				
Lenzburg	Black walnut	73	---	Bur oak, chinkapin oak, eastern redcedar.
	Sweetgum	76	72	
	Eastern cottonwood	---	---	
871G:				
Lenzburg	Black walnut	73	---	Bur oak, chinkapin oak, eastern redcedar.
	Sweetgum	76	72	
	Eastern cottonwood	---	---	
1107A:				
Sawmill	Pin oak	90	72	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak.
	American sycamore	---	---	
	Eastern cottonwood	---	---	
3073A:				
Ross	Black cherry	---	---	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
	Black walnut	---	---	
	Northern red oak	86	72	
	Sugar maple	85	57	
	Tuliptree	96	100	
	White oak	---	---	
3107A:				
Sawmill	Pin oak	90	72	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak.
	American sycamore	---	---	
	Eastern cottonwood	---	---	
3451A:				
Lawson	Red maple	---	---	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
	Silver maple	70	29	
3776A:				
Comfrey	Silver maple	94	43	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.

Table 14.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/acre	
8073A:				
Ross	Black cherry	---	---	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
	Black walnut	---	---	
	Northern red oak	86	72	
	Sugar maple	85	57	
	Tuliptree	96	100	
	White oak	---	---	
8107A:				
Sawmill	American sycamore	---	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
	Cherrybark oak	---	---	
	Eastern cottonwood	---	---	
	Pin oak	90	72	
	Sweetgum	---	---	
8404A:				
Titus	Eastern cottonwood	99	129	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
	Silver maple	80	29	
8451A:				
Lawson	Red maple	---	---	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
	Silver maple	70	29	
8776A:				
Comfrey	Silver maple	94	43	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.

Table 15a.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
23A:						
Blount	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
23B:						
Blount	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.12
42A:						
Papineau	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Slow water movement	0.96	Depth to saturated zone	0.99
	Slow water movement	0.96	Depth to saturated zone	0.78	Slow water movement	0.96
49A:						
Watseka	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Too sandy	0.59	Too sandy	0.59	Too sandy	0.59
69A:						
Milford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
88B:						
Sparta	Somewhat limited		Somewhat limited		Somewhat limited	
	Too sandy	0.88	Too sandy	0.88	Too sandy	0.88
					Slope	0.28
91A:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Slow water movement	0.96	Depth to saturated zone	0.98
	Slow water movement	0.96	Depth to saturated zone	0.75	Slow water movement	0.96
91B:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Slow water movement	0.96	Depth to saturated zone	0.98
	Slow water movement	0.96	Depth to saturated zone	0.75	Slow water movement	0.96
					Slope	0.12

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
91B2:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Slow water movement	0.96	Depth to saturated zone	0.98
	Slow water movement	0.96	Depth to saturated zone	0.75	Slow water movement	0.96
					Slope	0.12
91C2:						
Swygert	Very limited		Very limited		Very limited	
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
					Slope	0.88
93C2:						
Rodman	Somewhat limited		Somewhat limited		Very limited	
	Gravel content	0.02	Gravel content	0.02	Gravel content	1.00
					Slope	0.88
98B:						
Ade	Somewhat limited		Somewhat limited		Somewhat limited	
	Too sandy	0.68	Too sandy	0.68	Too sandy	0.68
					Slope	0.28
125A:						
Selma	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
132A:						
Starks	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
146A:						
Elliott	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Slow water movement	0.96	Depth to saturated zone	1.00
	Slow water movement	0.96	Depth to saturated zone	0.88	Slow water movement	0.96
146B:						
Elliott	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Slow water movement	0.96	Depth to saturated zone	1.00
	Slow water movement	0.96	Depth to saturated zone	0.88	Slow water movement	0.96
					Slope	0.12
148A:						
Proctor	Not limited		Not limited		Not limited	
148B:						
Proctor	Not limited		Not limited		Somewhat limited	
					Slope	0.28

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
149A:						
Brenton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
151A:						
Ridgeville	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
184A:						
Roby	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
189A:						
Martinton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
189B:						
Martinton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
					Slope	0.12
201A:						
Gilford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
223B:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.12
223B2:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.12
223C2:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.88

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
223C3:						
Varna---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.88
228A:						
Nappanee------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Slow water movement	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Depth to saturated zone	0.94	Slow water movement	1.00
228B:						
Nappanee------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Slow water movement	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Depth to saturated zone	0.94	Slow water movement	1.00
					Slope	0.12
232A:						
Ashkum--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
235A:						
Bryce---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
241D3:						
Chatsworth----------	Very limited		Very limited		Very limited	
	Slow water movement	1.00	Slow water movement	1.00	Slope	1.00
	Too clayey	1.00	Too clayey	1.00	Slow water movement	1.00
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Too clayey	1.00
	Slope	0.04	Slope	0.04	Depth to saturated zone	0.16
241E3:						
Chatsworth----------	Very limited		Very limited		Very limited	
	Slow water movement	1.00	Slow water movement	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Slow water movement	1.00
	Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Depth to saturated zone	0.16

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
241F:						
Chatsworth----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Depth to saturated zone	0.16
241G:						
Chatsworth----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Depth to saturated zone	0.16
290B:						
Warsaw--------------	Not limited		Not limited		Somewhat limited	
					Slope	0.12
290C2:						
Warsaw--------------	Not limited		Not limited		Somewhat limited	
					Slope	0.88
293A:						
Andres--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.78	Depth to saturated zone	0.99
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
294A:						
Symerton------------	Not limited		Not limited		Not limited	
294B:						
Symerton------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.28
294C2:						
Symerton------------	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
					Slow water movement	0.21
298A:						
Beecher-------------	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
298B:						
Beecher-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.12

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
315A:						
Channahon	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
315B:						
Channahon	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
					Slope	0.12
315C2:						
Channahon	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
					Slope	0.88
318B:						
Lorenzo	Not limited		Not limited		Somewhat limited	
					Slope	0.12
329A:						
Will	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
330A:						
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
343A:						
Kane	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
354B:						
Hononegah	Somewhat limited		Somewhat limited		Somewhat limited	
	Too sandy	0.68	Too sandy	0.68	Too sandy	0.68
					Slope	0.28
354D:						
Hononegah	Somewhat limited		Somewhat limited		Very limited	
	Too sandy	0.68	Too sandy	0.68	Slope	1.00
	Slope	0.04	Slope	0.04	Too sandy	0.68
356A:						
Elpaso	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
494B:						
Kankakee	Not limited		Not limited		Somewhat limited	
					Slope	0.12
					Content of large stones	0.01

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
503A:						
Rockton	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.43	Slow water movement	0.43	Slow water movement	0.43
503B:						
Rockton	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.43	Slow water movement	0.43	Slow water movement	0.43
					Depth to bedrock	0.35
					Slope	0.12
513A:						
Granby	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
516A:						
Faxon	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
530B:						
Ozaukee	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.12
530C2:						
Ozaukee	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Slope	0.88
					Depth to saturated zone	0.16
530C3:						
Ozaukee	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.88
530D2:						
Ozaukee	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Slow water movement	0.96
	Slope	0.04	Slope	0.04	Depth to saturated zone	0.16
530D3:						
Ozaukee	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
	Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slow water movement	0.96
	Slope	0.04	Slope	0.04	Depth to saturated zone	0.39

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
530E2:						
Ozaukee-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Depth to saturated zone	0.16
530F:						
Ozaukee-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
536:						
Dumps---------------	Not rated		Not rated		Not rated	
541B:						
Graymont------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.28
541C2:						
Graymont------------	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
					Slow water movement	0.96
553A:						
Bryce---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
Calamine------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
555A:						
Shadeland-----------	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
556B:						
High Gap------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
					Depth to bedrock	0.06
570B:						
Martinsville--------	Not limited		Not limited		Somewhat limited	
					Slope	0.12

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
570C2:						
Martinsville--------	Not limited		Not limited		Somewhat limited	
					Slope	0.88
570D2:						
Martinsville--------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Slope	0.04	Slope	1.00
594A:						
Reddick-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
614A:						
Chenoa--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Slow water movement	0.96	Depth to saturated zone	0.98
	Slow water movement	0.96	Depth to saturated zone	0.75	Slow water movement	0.96
672A:						
Cresent-------------	Not limited		Not limited		Not limited	
672B:						
Cresent-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
688B:						
Braidwood-----------	Not limited		Not limited		Somewhat limited	
					Slope	0.50
688D:						
Braidwood-----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.91	Slope	0.91	Slope	1.00
688G:						
Braidwood-----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
740A:						
Darroch-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
741B:						
Oakville------------	Very limited		Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00	Too sandy	1.00
					Slope	0.28
741D:						
Oakville------------	Very limited		Very limited		Very limited	
	Too sandy	1.00	Too sandy	1.00	Slope	1.00
	Slope	0.04	Slope	0.04	Too sandy	1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
802B:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	0.28
					Slow water movement	0.21
802D:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
	Slope	0.04	Slope	0.04	Slow water movement	0.21
817A:						
Channahon-----------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
Hesch---------------	Not limited		Not limited		Not limited	
817B:						
Channahon-----------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
					Slope	0.50
Hesch---------------	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.95
					Slope	0.50
830:						
Landfills-----------	Not rated		Not rated		Not rated	
863:						
Pits, clay----------	Not rated		Not rated		Not rated	
865:						
Pits, gravel--------	Not rated		Not rated		Not rated	
871D:						
Lenzburg------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
					Gravel content	0.02
					Content of large stones	0.01
871G:						
Lenzburg------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
					Gravel content	0.02
					Content of large stones	0.01
1107A:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Flooding	1.00
	Ponding	1.00	Flooding	0.40	Ponding	1.00

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3073A:						
Ross	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Flooding	0.40	Flooding	1.00
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Flooding	1.00
	Ponding	1.00	Flooding	0.40	Ponding	1.00
3451A:						
Lawson	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Depth to saturated zone	0.75	Flooding	1.00
	Depth to saturated zone	0.98	Flooding	0.40	Depth to saturated zone	0.98
3776A:						
Comfrey	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Flooding	1.00
	Ponding	1.00	Flooding	0.40	Ponding	1.00
4107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Ponding	1.00	Flooding	0.40	Ponding	1.00
4516A:						
Faxon	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
4904A:						
Muskego	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
8073A:						
Ross	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60
8107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Flooding	0.60

Table 15a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8404A:						
Titus	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Slow water movement	0.96	Slow water movement	0.96
	Slow water movement	0.96			Flooding	0.60
8451A:						
Lawson	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Depth to saturated zone	0.98			Flooding	0.60
8776A:						
Comfrey	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Flooding	0.60

Table 15b.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
23A:						
Blount	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.98	Depth to saturated zone	0.99
23B:						
Blount	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.98	Depth to saturated zone	0.99
42A:						
Papineau	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.50	Depth to saturated zone	0.50	Depth to saturated zone	0.78
49A:						
Watseka	Somewhat limited		Somewhat limited		Somewhat limited	
	Too sandy	0.59	Too sandy	0.59	Depth to saturated zone	0.75
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Droughty	0.05
69A:						
Milford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
88B:						
Sparta	Somewhat limited		Somewhat limited		Somewhat limited	
	Too sandy	0.88	Too sandy	0.88	Droughty	0.01
91A:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
91B:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
91B2:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
91C2:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
93C2:						
Rodman	Not limited		Not limited		Somewhat limited	
					Droughty	0.78
					Gravel content	0.02

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
98B:						
Ade-----------------	Somewhat limited		Somewhat limited		Not limited	
	Too sandy	0.68	Too sandy	0.68		
125A:						
Selma---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
132A:						
Starks--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
146A:						
Elliott-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.73	Depth to saturated zone	0.73	Depth to saturated zone	0.88
146B:						
Elliott-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.73	Depth to saturated zone	0.73	Depth to saturated zone	0.88
148A:						
Proctor-------------	Not limited		Not limited		Not limited	
148B:						
Proctor-------------	Not limited		Not limited		Not limited	
149A:						
Brenton-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
151A:						
Ridgeville----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
152A:						
Drummer-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
184A:						
Roby----------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
189A:						
Martinton-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
189B:						
Martinton-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
201A:						
Gilford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
223B:						
Varna	Not limited		Not limited		Not limited	
223B2:						
Varna	Not limited		Not limited		Not limited	
223C2:						
Varna	Not limited		Not limited		Not limited	
223C3:						
Varna	Not limited		Not limited		Not limited	
228A:						
Nappanee	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
228B:						
Nappanee	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
232A:						
Ashkum	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
235A:						
Bryce	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
241D3:						
Chatsworth	Very limited		Very limited		Very limited	
	Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
					Droughty	0.99
					Depth to saturated zone	0.08
					Slope	0.04
241E3:						
Chatsworth	Very limited		Very limited		Very limited	
	Too clayey	1.00	Too clayey	1.00	Slope	1.00
	Slope	0.02			Too clayey	1.00
					Droughty	0.90
					Depth to saturated zone	0.08

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
241F:						
Chatsworth----------	Very limited		Not limited		Very limited	
	Slope	1.00			Slope	1.00
					Droughty	0.86
					Depth to saturated zone	0.08
241G:						
Chatsworth----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Droughty	0.84
					Depth to saturated zone	0.08
290B:						
Warsaw--------------	Not limited		Not limited		Not limited	
290C2:						
Warsaw--------------	Not limited		Not limited		Not limited	
293A:						
Andres--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.50	Depth to saturated zone	0.50	Depth to saturated zone	0.78
294A:						
Symerton------------	Not limited		Not limited		Not limited	
294B:						
Symerton------------	Not limited		Not limited		Not limited	
294C2:						
Symerton------------	Not limited		Not limited		Not limited	
298A:						
Beecher-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.98	Depth to saturated zone	0.99
298B:						
Beecher-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
315A:						
Channahon-----------	Not limited		Not limited		Very limited	
					Depth to bedrock	1.00
					Droughty	0.41
315B:						
Channahon-----------	Not limited		Not limited		Very limited	
					Depth to bedrock	1.00
					Droughty	0.12
315C2:						
Channahon-----------	Not limited		Not limited		Very limited	
					Depth to bedrock	1.00
					Droughty	0.88

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
318B:						
Lorenzo-------------	Not limited		Not limited		Somewhat limited	
					Droughty	0.01
329A:						
Will----------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
330A:						
Peotone-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
343A:						
Kane----------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
354B:						
Hononegah-----------	Somewhat limited		Somewhat limited		Very limited	
	Too sandy	0.68	Too sandy	0.68	Droughty	1.00
354D:						
Hononegah-----------	Somewhat limited		Somewhat limited		Very limited	
	Too sandy	0.68	Too sandy	0.68	Droughty	1.00
					Slope	0.04
356A:						
Elpaso--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
494B:						
Kankakee------------	Not limited		Not limited		Somewhat limited	
					Content of large stones	0.01
503A:						
Rockton-------------	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.16
503B:						
Rockton-------------	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.35
513A:						
Granby--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Droughty	0.01

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
516A:						
Faxon---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Depth to bedrock	0.84
530B:						
Ozaukee-------------	Not limited		Not limited		Not limited	
530C2:						
Ozaukee-------------	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.08
530C3:						
Ozaukee-------------	Not limited		Not limited		Not limited	
530D2:						
Ozaukee-------------	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.08
					Slope	0.04
530D3:						
Ozaukee-------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.19
					Slope	0.04
530E2:						
Ozaukee-------------	Somewhat limited		Not limited		Very limited	
	Slope	0.02			Slope	1.00
					Depth to saturated zone	0.08
530F:						
Ozaukee-------------	Very limited		Not limited		Very limited	
	Slope	1.00			Slope	1.00
536:						
Dumps---------------	Not rated		Not rated		Not rated	
541B:						
Graymont------------	Not limited		Not limited		Not limited	
541C2:						
Graymont------------	Not limited		Not limited		Not limited	
553A:						
Bryce---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
553A:						
Calamine------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Depth to bedrock	0.20
					Droughty	0.01
555A:						
Shadeland-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
					Depth to bedrock	0.06
556B:						
High Gap------------	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.06
570B:						
Martinsville--------	Not limited		Not limited		Not limited	
570C2:						
Martinsville--------	Not limited		Not limited		Not limited	
570D2:						
Martinsville--------	Not limited		Not limited		Somewhat limited	
					Slope	0.04
594A:						
Reddick-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
614A:						
Chenoa--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
672A:						
Cresent-------------	Not limited		Not limited		Not limited	
672B:						
Cresent-------------	Not limited		Not limited		Not limited	
688B:						
Braidwood-----------	Not limited		Not limited		Not limited	
688D:						
Braidwood-----------	Not limited		Not limited		Somewhat limited	
					Slope	0.91
688G:						
Braidwood-----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
740A:						
Darroch-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
741B:						
Oakville	Very limited		Very limited		Somewhat limited	
	Too sandy	1.00	Too sandy	1.00	Droughty	0.34
741D:						
Oakville	Very limited		Very limited		Somewhat limited	
	Too sandy	1.00	Too sandy	1.00	Droughty	0.42
					Slope	0.04
802B:						
Orthents, loamy	Not limited		Not limited		Not limited	
802D:						
Orthents, loamy	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
817A:						
Channahon	Not limited		Not limited		Very limited	
					Depth to bedrock	1.00
					Droughty	0.65
Hesch	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.29
817B:						
Channahon	Not limited		Not limited		Very limited	
					Depth to bedrock	1.00
					Droughty	0.91
Hesch	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.95
					Droughty	0.05
830:						
Landfills	Not rated		Not rated		Not rated	
863:						
Pits, clay	Not rated		Not rated		Not rated	
865:						
Pits, gravel	Not rated		Not rated		Not rated	
871D:						
Lenzburg	Not limited		Not limited		Somewhat limited	
					Slope	0.96
					Content of large stones	0.01
871G:						
Lenzburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Content of large stones	0.01
1107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	0.40	Flooding	0.40	Ponding	1.00

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
3073A:						
Ross	Somewhat limited		Somewhat limited		Very limited	
	Flooding	0.40	Flooding	0.40	Flooding	1.00
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	0.40	Flooding	0.40	Ponding	1.00
3451A:						
Lawson	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.75
3776A:						
Comfrey	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	0.40	Flooding	0.40	Ponding	1.00
4107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
4516A:						
Faxon	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
					Depth to bedrock	0.84
4904A:						
Muskego	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
8073A:						
Ross	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
8107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Flooding	0.60

Table 15b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
8404A:						
Titus	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Flooding	0.60
8451A:						
Lawson	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
					Flooding	0.60
8776A:						
Comfrey	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Flooding	0.60

Table 16.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
23A:										
Blount	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
23B:										
Blount	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
42A:										
Papineau	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
49A:										
Watseka	Fair	Fair	Good	Good	Good	Fair	Poor	Fair	Good	Poor
69A:										
Milford	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
88B:										
Sparta	Poor	Poor	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
91A:										
Swygert	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
91B:										
Swygert	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
91B2:										
Swygert	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
91C2:										
Swygert	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
93C2:										
Rodman	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
98B:										
Ade	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
125A:										
Selma	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
132A:										
Starks	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
146A:										
Elliott	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
146B:										
Elliott	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
148A:										
Proctor	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
148B:										
Proctor-----------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
149A:										
Brenton-----------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
151A:										
Ridgeville--------	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
152A:										
Drummer-----------	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
184A:										
Roby--------------	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
189A:										
Martinton---------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
189B:										
Martinton---------	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
201A:										
Gilford-----------	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
223B:										
Varna-------------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
223B2:										
Varna-------------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
223C2:										
Varna-------------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
223C3:										
Varna-------------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
228A:										
Nappanee----------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
228B:										
Nappanee----------	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
232A:										
Ashkum------------	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
235A:										
Bryce-------------	Fair	Fair	Poor	Fair	Poor	Fair	Good	Fair	Fair	Fair
241D3:										
Chatsworth--------	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
241E3:										
Chatsworth--------	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
241F: Chatsworth	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
241G: Chatsworth	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
290B: Warsaw	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
290C2: Warsaw	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
293A: Andres	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
294A: Symerton	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
294B: Symerton	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
294C2: Symerton	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
298A: Beecher	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
298B: Beecher	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
315A: Channahon	Poor	Poor	Fair	Fair	Fair	Poor	Very poor	Poor	Fair	Very poor
315B: Channahon	Poor	Poor	Fair	Fair	Fair	Poor	Very poor	Poor	Fair	Very poor
315C2: Channahon	Poor	Poor	Fair	Fair	Fair	Poor	Very poor	Poor	Fair	Very poor
318B: Lorenzo	Fair	Fair	Good	Fair	Fair	Poor	Very poor	Fair	Fair	Very poor
329A: Will	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
330A: Peotone	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
343A: Kane	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
354B:										
Hononegah	Very poor	Poor	Poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor	Very poor
354D:										
Hononegah	Very poor	Poor	Poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor	Very poor
356A:										
Elpaso	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
494B:										
Kankakee	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
503A:										
Rockton	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
503B:										
Rockton	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
513A:										
Granby	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
516A:										
Faxon	Fair	Fair	Fair	Fair	Poor	Good	Fair	Fair	Fair	Fair
530B:										
Ozaukee	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
530C2:										
Ozaukee	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
530C3:										
Ozaukee	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
530D2:										
Ozaukee	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
530D3:										
Ozaukee	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
530E2:										
Ozaukee	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
530F:										
Ozaukee	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
536.										
Dumps										
541B:										
Graymont	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
541C2:										
Graymont	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
553A:										
Bryce	Fair	Fair	Poor	Fair	Poor	Fair	Good	Fair	Fair	Fair
Calamine	Fair	Fair	Poor	Fair	Poor	Fair	Good	Fair	Fair	Fair
555A:										
Shadeland	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
556B:										
High Gap	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
570B:										
Martinsville	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
570C2:										
Martinsville	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
570D2:										
Martinsville	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
594A:										
Reddick	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
614A:										
Chenoa	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
672A:										
Cresent	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
672B:										
Cresent	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
688B:										
Braidwood	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
688D:										
Braidwood	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
688G:										
Braidwood	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
740A:										
Darroch	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
741B:										
Oakville	Poor	Fair	Fair	Fair	Fair	Poor	Very poor	Fair	Fair	Very poor

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
741D:										
Oakville	Poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
802B:										
Orthents, loamy	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
802D:										
Orthents, loamy	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
817A:										
Channahon	Poor	Poor	Fair	Fair	Fair	Poor	Very poor	Poor	Fair	Very poor
Hesch	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
817B:										
Channahon	Poor	Poor	Fair	Fair	Fair	Poor	Very poor	Poor	Fair	Very poor
Hesch	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
830. Landfills										
863. Pits, clay										
865. Pits, gravel										
871D:										
Lenzburg	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
871G:										
Lenzburg	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
1107A:										
Sawmill	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
3073A:										
Ross	Poor	Fair	Fair	Good	Fair	Fair	Very poor	Fair	Good	Poor
3107A:										
Sawmill	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
3451A:										
Lawson	Poor	Fair	Fair	Good	Fair	Fair	Fair	Fair	Good	Fair
3776A:										
Comfrey	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
4107A:										
Sawmill	Very poor	Very poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good

Table 16.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
4516A:										
Faxon	Very poor	Very poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
4904A:										
Muskego	Very poor	Very poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Peotone	Very poor	Very poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
8073A:										
Ross	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
8107A:										
Sawmill	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
8404A:										
Titus	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good
8451A:										
Lawson	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
8776A:										
Comfrey	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good

Table 17a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
23A:						
Blount	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
23B:						
Blount	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
42A:						
Papineau	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
49A:						
Watseka	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
69A:						
Milford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
88B:						
Sparta	Not limited		Not limited		Not limited	
91A:						
Swygert	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
91B:						
Swygert	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
91B2:						
Swygert	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
91C2:						
Swygert	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	0.50	Depth to saturated zone	0.98
					Slope	0.12
93C2:						
Rodman	Not limited		Not limited		Somewhat limited	
					Slope	0.12
98B:						
Ade	Not limited		Not limited		Not limited	
125A:						
Selma	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
132A:						
Starks	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
146A:						
Elliott	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
146B:						
Elliott	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
148A:						
Proctor	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
148B:						
Proctor	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
149A:						
Brenton	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
151A:						
Ridgeville	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
184A:						
Roby	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
189A:						
Martinton	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
189B:						
Martinton	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
201A:						
Gilford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
223B:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
223B2:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
223C2:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50	Slope	0.12
223C3:						
Varna	Not limited		Somewhat limited		Somewhat limited	
			Depth to saturated zone	0.99	Slope	0.12
228A:						
Nappanee	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
228B:						
Nappanee	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
232A:						
Ashkum	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Ponding	1.00	Shrink-swell	1.00
	Ponding	1.00	Shrink-swell	0.50	Ponding	1.00
235A:						
Bryce	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
241D3:						
Chatsworth	Somewhat limited		Very limited		Very limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	1.00
	Depth to saturated zone	0.16	Shrink-swell	0.50	Shrink-swell	0.50
	Slope	0.04	Slope	0.04	Depth to saturated zone	0.16
241E3:						
Chatsworth	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Slope	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.16	Shrink-swell	0.50	Depth to saturated zone	0.16
241F:						
Chatsworth	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.16	Shrink-swell	0.50	Depth to saturated zone	0.16
241G:						
Chatsworth	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.16	Shrink-swell	0.50	Depth to saturated zone	0.16
290B:						
Warsaw	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
290C2:						
Warsaw	Not limited		Not limited		Somewhat limited	
					Slope	0.12
293A:						
Andres	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
294A:						
Symerton-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.85	Shrink-swell	0.50
			Shrink-swell	0.50		
294B:						
Symerton-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.97	Shrink-swell	0.50
294C2:						
Symerton-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Slope	0.97
			Shrink-swell	0.50	Shrink-swell	0.50
298A:						
Beecher------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
298B:						
Beecher------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
315A:						
Channahon----------	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
315B:						
Channahon----------	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
315C2:						
Channahon----------	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.12
318B:						
Lorenzo------------	Not limited		Not limited		Not limited	
329A:						
Will---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
330A:						
Peotone-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
343A:						
Kane----------------	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50			Shrink-swell	0.50
354B:						
Hononegah-----------	Not limited		Not limited		Not limited	
354D:						
Hononegah-----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Slope	0.04	Slope	1.00
356A:						
Elpaso--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
494B:						
Kankakee------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Content of large stones	0.28	Content of large stones	0.28	Content of large stones	0.28
503A:						
Rockton-------------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to hard bedrock	1.00	Shrink-swell	0.50
	Depth to hard bedrock	0.15	Shrink-swell	0.50	Depth to hard bedrock	0.15
503B:						
Rockton-------------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to hard bedrock	1.00	Shrink-swell	0.50
	Depth to hard bedrock	0.35	Shrink-swell	0.50	Depth to hard bedrock	0.35
513A:						
Granby--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
516A:						
Faxon---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to hard bedrock	1.00	Ponding	1.00
	Depth to hard bedrock	0.84	Ponding	1.00	Depth to hard bedrock	0.84
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
530B:						
Ozaukee	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
530C2:						
Ozaukee	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.16	Depth to saturated zone	1.00	Depth to saturated zone	0.16
					Slope	0.12
530C3:						
Ozaukee	Not limited		Somewhat limited		Somewhat limited	
			Depth to saturated zone	0.99	Slope	0.12
530D2:						
Ozaukee	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.16	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.04	Slope	0.04	Depth to saturated zone	0.16
530D3:						
Ozaukee	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.39	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.04	Slope	0.04	Depth to saturated zone	0.39
530E2:						
Ozaukee	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Slope	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.16			Depth to saturated zone	0.16
530F:						
Ozaukee	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
536:						
Dumps	Not rated		Not rated		Not rated	
541B:						
Graymont	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
541C2:						
Graymont	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Slope	0.97
					Shrink-swell	0.50
553A:						
Bryce	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
553A:						
Calamine	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
			Depth to soft bedrock	0.20		
555A:						
Shadeland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to soft bedrock	0.06		
556B:						
High Gap	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.49		
			Depth to soft bedrock	0.06		
570B:						
Martinsville	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
570C2:						
Martinsville	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.12
570D2:						
Martinsville	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.04	Slope	0.04	Shrink-swell	0.50
594A:						
Reddick	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
614A:						
Chenoa	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98			Depth to saturated zone	0.98
672A:						
Cresent	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
672B:						
Cresent	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
688B:						
Braidwood-----------	Not limited		Not limited		Not limited	
688D:						
Braidwood-----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.91	Slope	0.91	Slope	1.00
688G:						
Braidwood-----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
740A:						
Darroch-------------	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
741B:						
Oakville------------	Not limited		Not limited		Not limited	
741D:						
Oakville------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Slope	0.04	Slope	1.00
802B:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.47		
802D:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.04	Depth to saturated zone	0.47	Shrink-swell	0.50
			Slope	0.04		
817A:						
Channahon-----------	Somewhat limited		Very limited		Somewhat limited	
	Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Hesch---------------	Not limited		Somewhat limited		Not limited	
			Depth to soft bedrock	0.29		
817B:						
Channahon-----------	Somewhat limited		Very limited		Somewhat limited	
	Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Hesch---------------	Not limited		Somewhat limited		Not limited	
			Depth to soft bedrock	0.95		
830:						
Landfills-----------	Not rated		Not rated		Not rated	
863:						
Pits, clay----------	Not rated		Not rated		Not rated	

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
865:						
Pits, gravel	Not rated		Not rated		Not rated	
871D:						
Lenzburg	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
871G:						
Lenzburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
1107A:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3073A:						
Ross	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Depth to saturated zone	0.16		
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3451A:						
Lawson	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
			Shrink-swell	0.50		
3776A:						
Comfrey	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
4107A:						
Sawmill	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
4516A:						
Faxon	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to hard bedrock	0.84	Depth to hard bedrock	1.00	Depth to hard bedrock	0.84
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
4904A:						
Muskego	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Organic matter content	1.00	Organic matter content	1.00	Organic matter content	1.00
			Shrink-swell	0.50		
Peotone	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
8073A:						
Ross	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Depth to saturated zone	0.15		
8107A:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8404A:						
Titus	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
8451A:						
Lawson	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98

Table 17a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
8776A:						
Comfrey-------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 17b.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
23A:						
Blount	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Low strength	1.00	Dense layer	0.50		
	Depth to saturated zone	0.99	Cutbanks cave	0.10		
	Shrink-swell	0.50	Too clayey	0.02		
23B:						
Blount	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Low strength	1.00	Dense layer	0.50		
	Depth to saturated zone	0.99	Cutbanks cave	0.10		
	Shrink-swell	0.50	Too clayey	0.02		
42A:						
Papineau	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.78	Depth to saturated zone	1.00	Depth to saturated zone	0.78
	Shrink-swell	0.50	Too clayey	1.00		
	Frost action	0.50	Cutbanks cave	0.10		
49A:						
Watseka	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.75	Depth to saturated zone	1.00	Depth to saturated zone	0.75
			Cutbanks cave	1.00	Droughty	0.05
69A:						
Milford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
88B:						
Sparta	Not limited		Very limited		Somewhat limited	
			Cutbanks cave	1.00	Droughty	0.01
91A:						
Swygert	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Too clayey	0.32		
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Frost action	0.50				

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
91B:						
Swygert	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Too clayey	0.32		
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Frost action	0.50				
91B2:						
Swygert	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Too clayey	0.32		
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Frost action	0.50				
91C2:						
Swygert	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75	Too clayey	0.08		
	Frost action	0.50				
93C2:						
Rodman	Not limited		Very limited		Somewhat limited	
			Cutbanks cave	1.00	Droughty	0.78
					Gravel content	0.02
98B:						
Ade	Not limited		Very limited		Not limited	
			Cutbanks cave	1.00		
125A:						
Selma	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00		
	Shrink-swell	0.50				
132A:						
Starks	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	1.00		
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				
146A:						
Elliott	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.88
	Depth to saturated zone	0.88	Dense layer	0.50		
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
146B:						
Elliott	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.88
	Depth to saturated zone	0.88	Dense layer	0.50		
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
148A:						
Proctor	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
148B:						
Proctor	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
149A:						
Brenton	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	1.00		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
151A:						
Ridgeville	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.75	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Frost action	0.50	Cutbanks cave	1.00		
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	1.00	Ponding	1.00
	Low strength	1.00	Ponding	1.00		
	Ponding	1.00				
	Shrink-swell	0.50				
184A:						
Roby	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75	Cutbanks cave	1.00		
189A:						
Martinton	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
189B:						
Martinton	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
201A:						
Gilford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00		
223B:						
Varna	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50	Dense layer	0.50		
	Frost action	0.50	Cutbanks cave	0.10		
			Too clayey	0.03		
223B2:						
Varna	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50	Dense layer	0.50		
	Frost action	0.50	Cutbanks cave	0.10		
223C2:						
Varna	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50	Dense layer	0.50		
	Frost action	0.50	Cutbanks cave	0.10		
223C3:						
Varna	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.99		
	Frost action	0.50	Dense layer	0.50		
			Cutbanks cave	0.10		
228A:						
Nappanee	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Dense layer	0.50		
	Depth to saturated zone	0.94	Too clayey	0.32		
	Shrink-swell	0.50	Cutbanks cave	0.10		
228B:						
Nappanee	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Dense layer	0.50		
	Depth to saturated zone	0.94	Too clayey	0.32		
	Shrink-swell	0.50	Cutbanks cave	0.10		

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
232A:						
Ashkum	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Ponding	1.00				
235A:						
Bryce	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Too clayey	1.00
	Low strength	1.00	Too clayey	0.50	Ponding	1.00
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
241D3:						
Chatsworth	Very limited		Very limited		Very limited	
	Low strength	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Shrink-swell	0.50			Droughty	0.99
	Frost action	0.50	Dense layer	0.50	Depth to saturated zone	0.08
	Depth to saturated zone	0.08	Too clayey	0.32		
			Cutbanks cave	0.10	Slope	0.04
	Slope	0.04	Slope	0.04		
241E3:						
Chatsworth	Very limited		Very limited		Very limited	
	Low strength	1.00	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00			Too clayey	1.00
	Shrink-swell	0.50	Slope	1.00	Droughty	0.90
	Frost action	0.50	Dense layer	0.50	Depth to saturated zone	0.08
	Depth to saturated zone	0.08	Too clayey	0.32		
			Cutbanks cave	0.10		
241F:						
Chatsworth	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Depth to saturated zone	1.00	Droughty	0.86
	Shrink-swell	0.50			Depth to saturated zone	0.08
	Frost action	0.50	Dense layer	0.50		
	Depth to saturated zone	0.08	Too clayey	0.32		
			Cutbanks cave	0.10		
241G:						
Chatsworth	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Depth to saturated zone	1.00	Droughty	0.84
	Shrink-swell	0.50			Depth to saturated zone	0.08
	Frost action	0.50	Dense layer	0.50		
	Depth to saturated zone	0.08	Too clayey	0.32		
			Cutbanks cave	0.10		
290B:						
Warsaw	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
	Low strength	0.22				

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
290C2:						
Warsaw	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
293A:						
Andres	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.78
	Depth to saturated zone	0.78	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
294A:						
Symerton	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Depth to saturated zone	0.85		
	Frost action	0.50	Cutbanks cave	0.10		
294B:						
Symerton	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50	Depth to saturated zone	0.97		
294C2:						
Symerton	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99		
	Frost action	0.50	Cutbanks cave	0.10		
298A:						
Beecher	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Low strength	1.00	Dense layer	0.50		
	Depth to saturated zone	0.99	Cutbanks cave	0.10		
	Shrink-swell	0.50				
298B:						
Beecher	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Dense layer	0.50		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
315A:						
Channahon	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
					Droughty	0.41
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
315B:						
Channahon	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
					Droughty	0.12
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
315C2:						
Channahon-----------	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
					Droughty	0.88
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
318B:						
Lorenzo-------------	Somewhat limited		Very limited		Somewhat limited	
	Frost action	0.50	Cutbanks cave	1.00	Droughty	0.01
329A:						
Will----------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00		
330A:						
Peotone-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00	Too clayey	0.02		
	Ponding	1.00				
343A:						
Kane----------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
354B:						
Hononegah-----------	Not limited		Very limited		Very limited	
			Cutbanks cave	1.00	Droughty	1.00
354D:						
Hononegah-----------	Somewhat limited		Very limited		Very limited	
	Slope	0.04	Cutbanks cave	1.00	Droughty	1.00
			Slope	0.04	Slope	0.04
356A:						
Elpaso--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
494B:						
Kankakee------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Frost action	0.50	Content of large stones	0.28	Content of large stones	0.01
	Content of large stones	0.28	Cutbanks cave	0.10		

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
503A:						
Rockton-------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.16
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
	Depth to hard bedrock	0.15				
503B:						
Rockton-------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.35
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
	Depth to hard bedrock	0.35				
513A:						
Granby--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Cutbanks cave	1.00	Ponding	1.00
	Frost action	0.50	Ponding	1.00	Droughty	0.01
516A:						
Faxon---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to hard bedrock	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Low strength	1.00	Ponding	1.00	Depth to bedrock	0.84
	Ponding	1.00	Cutbanks cave	0.10		
	Depth to hard bedrock	0.84				
530B:						
Ozaukee-------------	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50	Dense layer	0.50		
	Frost action	0.50	Cutbanks cave	0.10		
530C2:						
Ozaukee-------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.08
	Frost action	0.50	Dense layer	0.50		
	Depth to saturated zone	0.08	Cutbanks cave	0.10		
530C3:						
Ozaukee-------------	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.99		
	Frost action	0.50	Dense layer	0.50		
			Cutbanks cave	0.10		
530D2:						
Ozaukee-------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.08
	Frost action	0.50	Dense layer	0.50	Slope	0.04
	Depth to saturated zone	0.08	Cutbanks cave	0.10		
	Slope	0.04	Slope	0.04		

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
530D3:						
Ozaukee	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Frost action	0.50	Dense layer	0.50	Slope	0.04
	Depth to saturated zone	0.19	Cutbanks cave	0.10		
	Slope	0.04	Slope	0.04		
530E2:						
Ozaukee	Very limited		Very limited		Very limited	
	Low strength	1.00	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to saturated zone	0.08
	Shrink-swell	0.50	Dense layer	0.50		
	Frost action	0.50	Cutbanks cave	0.10		
	Depth to saturated zone	0.08				
530F:						
Ozaukee	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.05	Dense layer	0.50		
	Frost action	0.50	Cutbanks cave	0.10		
536:						
Dumps	Not rated		Not rated		Not rated	
541B:						
Graymont	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
541C2:						
Graymont	Very limited		Very limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
553A:						
Bryce	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Too clayey	1.00
	Low strength	1.00	Too clayey	0.50	Ponding	1.00
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
Calamine	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Too clayey	1.00
	Low strength	1.00	Too clayey	0.50	Ponding	1.00
	Shrink-swell	1.00	Depth to soft bedrock	0.20	Depth to bedrock	0.20
	Ponding	1.00	Cutbanks cave	0.10	Droughty	0.01

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
555A:						
Shadeland	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10	Depth to bedrock	0.06
	Depth to saturated zone	0.94	Depth to soft bedrock	0.06		
	Shrink-swell	0.50				
556B:						
High Gap	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	0.49	Depth to bedrock	0.06
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50	Depth to soft bedrock	0.06		
570B:						
Martinsville	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
570C2:						
Martinsville	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
570D2:						
Martinsville	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Cutbanks cave	1.00	Slope	0.04
	Frost action	0.50	Slope	0.04		
	Slope	0.04				
594A:						
Reddick	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
614A:						
Chenoa	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Frost action	0.50				
672A:						
Cresent	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
672B:						
Cresent	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
688B:						
Braidwood-----------	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
			Dense layer	0.50		
688D:						
Braidwood-----------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.91	Cutbanks cave	1.00	Slope	0.91
	Frost action	0.50	Slope	0.91		
			Dense layer	0.50		
688G:						
Braidwood-----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	1.00		
			Dense layer	0.50		
740A:						
Darroch-------------	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.75	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Frost action	0.50	Cutbanks cave	0.10		
741B:						
Oakville------------	Not limited		Very limited		Somewhat limited	
			Cutbanks cave	1.00	Droughty	0.34
741D:						
Oakville------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.04	Cutbanks cave	1.00	Droughty	0.42
			Slope	0.04	Slope	0.04
802B:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Depth to saturated zone	0.47		
	Frost action	0.50				
	Low strength	0.22	Cutbanks cave	0.10		
802D:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.47	Slope	0.04
	Frost action	0.50				
	Low strength	0.22	Cutbanks cave	0.10		
	Slope	0.04	Slope	0.04		
817A:						
Channahon-----------	Somewhat limited		Very limited		Very limited	
	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
					Droughty	0.65
	Frost action	0.50	Cutbanks cave	0.10		
Hesch---------------	Somewhat limited		Very limited		Somewhat limited	
	Frost action	0.50	Cutbanks cave	1.00	Depth to bedrock	0.29
			Depth to soft bedrock	0.29		

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
817B:						
Channahon-----------	Somewhat limited		Very limited		Very limited	
	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
					Droughty	0.91
	Frost action	0.50	Cutbanks cave	0.10		
Hesch---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Frost action	0.50	Depth to soft bedrock	0.95	Depth to bedrock	0.95
					Droughty	0.05
			Cutbanks cave	0.10		
830:						
Landfills-----------	Not rated		Not rated		Not rated	
863:						
Pits, clay----------	Not rated		Not rated		Not rated	
865:						
Pits, gravel--------	Not rated		Not rated		Not rated	
871D:						
Lenzburg------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Cutbanks cave	1.00	Slope	0.96
	Slope	0.96	Slope	0.96	Content of large stones	0.01
	Shrink-swell	0.50				
	Frost action	0.50				
871G:						
Lenzburg------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	1.00	Content of large stones	0.01
	Shrink-swell	0.50				
	Frost action	0.50				
1107A:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
					Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00		
	Flooding	1.00	Flooding	0.80	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
3073A:						
Ross----------------	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Flooding	0.80	Flooding	1.00
	Low strength	1.00	Depth to saturated zone	0.16		
	Frost action	0.50				
			Cutbanks cave	0.10		
3107A:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
					Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00		
	Flooding	1.00	Flooding	0.80	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
3451A:						
Lawson--------------	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
3776A:						
Comfrey-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.80	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
4107A:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
4516A:						
Faxon---------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Depth to hard bedrock	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Depth to saturated zone	1.00	Depth to bedrock	0.84
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to hard bedrock	0.84				
4904A:						
Muskego-------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Subsidence	1.00	Organic matter content	1.00		
	Frost action	1.00				
Peotone-------------	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00	Too clayey	0.02		
	Shrink-swell	1.00				
8073A:						
Ross----------------	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Frost action	0.50	Depth to saturated zone	0.15		
	Low strength	0.22	Cutbanks cave	0.10		

Table 17b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
8404A:						
Titus	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
8451A:						
Lawson	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Flooding	1.00				
	Low strength	1.00	Flooding	0.60	Flooding	0.60
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
8776A:						
Comfrey	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				

Table 18a.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
23A:				
Blount	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
23B:				
Blount	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.08
42A:				
Papineau	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
49A:				
Watseka	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Filtering capacity	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00		
69A:				
Milford	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Ponding	1.00
	Ponding	1.00	Seepage	0.53
88B:				
Sparta	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Slope	0.18
91A:				
Swygert	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
91B:				
Swygert	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.08
91B2:				
Swygert	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.08
91C2:				
Swygert	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.68
93C2:				
Rodman	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
			Slope	0.68
	Seepage, bottom layer	1.00		
98B:				
Ade	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
			Slope	0.18
	Seepage, bottom layer	1.00		
125A:				
Selma	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
			Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Ponding	1.00
	Ponding	1.00		
	Slow water movement	0.46		
132A:				
Starks	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
146A:				
Elliott	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
146B:				
Elliott	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.08
148A:				
Proctor	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
148B:				
Proctor	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.18
	Slow water movement	0.46		
149A:				
Brenton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
151A:				
Ridgeville	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
			Depth to saturated zone	1.00
	Seepage, bottom layer	1.00		
152A:				
Drummer	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
			Ponding	1.00
	Ponding	1.00		
	Slow water movement	0.46		
184A:				
Roby	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
			Depth to saturated zone	1.00
	Seepage, bottom layer	1.00		
189A:				
Martinton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00		

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
189B:				
Martinton-----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Slope	0.08
201A:				
Gilford------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
223B:				
Varna---------------	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.08
	Depth to saturated zone	1.00	Depth to saturated zone	0.04
223B2:				
Varna---------------	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.08
	Depth to saturated zone	1.00	Depth to saturated zone	0.04
223C2:				
Varna---------------	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.68
	Depth to saturated zone	1.00	Depth to saturated zone	0.04
223C3:				
Varna---------------	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.68
	Depth to saturated zone	1.00	Depth to saturated zone	0.04
228A:				
Nappanee------------	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
228B:				
Nappanee------------	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.08

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
232A:				
Ashkum	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Ponding	1.00
	Ponding	1.00		
235A:				
Bryce	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00		
241D3:				
Chatsworth	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	0.56
	Slope	0.04		
241E3:				
Chatsworth	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	0.56
	Slope	1.00		
241F:				
Chatsworth	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	0.56
	Slope	1.00		
241G:				
Chatsworth	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	0.56
	Slope	1.00		
290B:				
Warsaw	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	0.08
290C2:				
Warsaw	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	0.68

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
293A:				
Andres	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
294A:				
Symerton	Very limited		Somewhat limited	
	Slow water movement	1.00	Seepage	0.53
	Depth to saturated zone	1.00		
294B:				
Symerton	Very limited		Somewhat limited	
	Slow water movement	1.00	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	1.00	Depth to saturated zone	0.01
294C2:				
Symerton	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	1.00	Depth to saturated zone	0.12
298A:				
Beecher	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
298B:				
Beecher	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.08
315A:				
Channahon	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
			Seepage	0.53
315B:				
Channahon	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
			Seepage	0.53
			Slope	0.08
315C2:				
Channahon	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
			Slope	0.68
			Seepage	0.53

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
318B:				
Lorenzo	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Slope	0.08
329A:				
Will	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46		
330A:				
Peotone	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Ponding	1.00
	Ponding	1.00		
343A:				
Kane	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46		
354B:				
Hononegah	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Slope	0.18
354D:				
Hononegah	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Slope	1.00
	Slope	0.04		
356A:				
Elpaso	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Ponding	1.00
	Ponding	1.00	Seepage	0.53

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
494B:				
Kankakee------------	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.08
	Content of large stones	0.28		
503A:				
Rockton-------------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Slow water movement	1.00		
			Seepage	0.53
503B:				
Rockton-------------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Slow water movement	1.00		
			Seepage	0.53
			Slope	0.08
513A:				
Granby--------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
			Depth to saturated zone	1.00
	Filtering capacity	1.00		
			Ponding	1.00
	Seepage, bottom layer	1.00		
	Ponding	1.00		
516A:				
Faxon---------------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Depth to saturated zone	1.00		
			Depth to saturated zone	1.00
	Ponding	1.00		
	Slow water movement	0.46	Ponding	1.00
			Seepage	0.53
530B:				
Ozaukee-------------	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.08
			Depth to saturated zone	0.04
	Depth to saturated zone	1.00		
530C2:				
Ozaukee-------------	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.68
			Depth to saturated zone	0.56
	Depth to saturated zone	1.00		
530C3:				
Ozaukee-------------	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.68
			Depth to saturated zone	0.08
	Depth to saturated zone	1.00		

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
530D2:				
Ozaukee	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	0.56
	Slope	0.04		
530D3:				
Ozaukee	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Slope	0.04		
530E2:				
Ozaukee	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	0.56
	Slope	1.00		
530F:				
Ozaukee	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	0.04
	Slope	1.00		
536:				
Dumps	Not rated		Not rated	
541B:				
Graymont	Very limited		Somewhat limited	
	Slow water movement	1.00	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	1.00	Depth to saturated zone	0.04
541C2:				
Graymont	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	1.00	Depth to saturated zone	0.19
553A:				
Bryce	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Depth to soft bedrock	0.93
	Depth to bedrock	0.98		

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
553A:				
Calamine	Very limited		Very limited	
	Slow water movement	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00		
555A:				
Shadeland	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.72	Seepage	0.53
556B:				
High Gap	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Depth to saturated zone	0.95	Seepage	0.53
	Slow water movement	0.46	Slope	0.18
570B:				
Martinsville	Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	0.53
	Slow water movement	0.46	Slope	0.08
570C2:				
Martinsville	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	0.68
570D2:				
Martinsville	Very limited		Very limited	
	Seepage, bottom layer	1.00	Slope	1.00
	Slow water movement	0.46	Seepage	1.00
	Slope	0.04		
594A:				
Reddick	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Seepage	0.53
614A:				
Chenoa	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
672A:				
Cresent------------	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
672B:				
Cresent------------	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.18
	Slow water movement	0.46		
688B:				
Braidwood----------	Very limited		Somewhat limited	
	Slow water movement	1.00	Seepage	0.53
			Slope	0.32
688D:				
Braidwood----------	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
	Slope	0.91		
688G:				
Braidwood----------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	1.00	Seepage	0.53
740A:				
Darroch------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
741B:				
Oakville-----------	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
			Slope	0.18
	Seepage, bottom layer	1.00		
741D:				
Oakville-----------	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
			Slope	1.00
	Seepage, bottom layer	1.00		
	Slope	0.04		
802B:				
Orthents, loamy-----	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.18
	Depth to saturated zone	0.94		

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
802D:				
Orthents, loamy-----	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Depth to saturated zone	0.94		
	Slope	0.04		
817A:				
Channahon-----------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
Hesch---------------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
817B:				
Channahon-----------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.32
Hesch---------------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.32
830:				
Landfills-----------	Not rated		Not rated	
863:				
Pits, clay----------	Not rated		Not rated	
865:				
Pits, gravel--------	Not rated		Not rated	
871D:				
Lenzburg------------	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Slope	0.96		
871G:				
Lenzburg------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	1.00		
1107A:				
Sawmill-------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
3073A:				
Ross	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
	Depth to saturated zone	0.43		
3107A:				
Sawmill	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
3451A:				
Lawson	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
3776A:				
Comfrey	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
4107A:				
Sawmill	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Organic matter content	1.00
			Seepage	0.53
4516A:				
Faxon	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Organic matter content	1.00
			Seepage	0.53

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
4904A:				
Muskego	Very limited		Very limited	
	Slow water movement	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	1.00
	Subsidence	1.00	Organic matter content	1.00
Peotone	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00		
8073A:				
Ross	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
	Depth to saturated zone	0.40		
8107A:				
Sawmill	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
8404A:				
Titus	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00		
8451A:				
Lawson	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53

Table 18a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
8776A:				
Comfrey	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53

Table 18b.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
23A:						
Blount	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
23B:						
Blount	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
42A:						
Papineau	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00			Hard to compact	1.00
49A:						
Watseka	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	1.00			Depth to saturated zone	1.00
69A:						
Milford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
88B:						
Sparta	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	0.50			Too sandy	0.50
91A:						
Swygert	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
					Depth to saturated zone	1.00
91B:						
Swygert	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
					Depth to saturated zone	1.00

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
91B2:						
Swygert	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
					Depth to saturated zone	1.00
91C2:						
Swygert	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
					Depth to saturated zone	1.00
93C2:						
Rodman	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	0.50			Gravel content	1.00
					Too sandy	0.50
98B:						
Ade	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
125A:						
Selma	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Seepage	0.52
132A:						
Starks	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50			Too sandy	0.50
	Too sandy	0.50			Seepage	0.22
146A:						
Elliott	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
146B:						
Elliott	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
148A:						
Proctor	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.22

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
148B:						
Proctor	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.22
149A:						
Brenton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
151A:						
Ridgeville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.22
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Too clayey	0.50
	Too clayey	0.50				
184A:						
Roby	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	1.00			Depth to saturated zone	1.00
189A:						
Martinton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
189B:						
Martinton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
201A:						
Gilford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too sandy	1.00			Too sandy	1.00

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
223B:						
Varna	Very limited		Somewhat limited		Very limited	
	Too clayey	1.00	Depth to saturated zone	0.04	Too clayey	1.00
	Depth to saturated zone	0.68			Depth to saturated zone	0.24
223B2:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
223C2:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
223C3:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
228A:						
Nappanee	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	1.00
228B:						
Nappanee	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00			Too clayey	1.00
232A:						
Ashkum	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
235A:						
Bryce	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00	Ponding	1.00	Too clayey	1.00
	Ponding	1.00			Hard to compact	1.00
					Ponding	1.00
241D3:						
Chatsworth	Very limited		Somewhat limited		Very limited	
	Too clayey	1.00	Depth to saturated zone	0.56	Too clayey	1.00
	Depth to saturated zone	0.98	Slope	0.04	Hard to compact	1.00
	Slope	0.04			Depth to saturated zone	0.76
					Slope	0.04

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
241E3:						
Chatsworth----------	Very limited		Very limited		Very limited	
	Too clayey	1.00	Slope	1.00	Too clayey	1.00
	Slope	1.00	Depth to saturated zone	0.56	Hard to compact	1.00
	Depth to saturated zone	0.98			Slope	1.00
					Depth to saturated zone	0.76
241F:						
Chatsworth----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	1.00	Depth to saturated zone	0.56	Too clayey	1.00
	Depth to saturated zone	0.98			Hard to compact	1.00
					Depth to saturated zone	0.76
241G:						
Chatsworth----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	1.00	Depth to saturated zone	0.56	Too clayey	1.00
	Depth to saturated zone	0.98			Hard to compact	1.00
					Depth to saturated zone	0.76
290B:						
Warsaw--------------	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
					Too sandy	0.50
	Too sandy	0.50			Gravel content	0.04
290C2:						
Warsaw--------------	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
					Too sandy	0.50
	Too sandy	0.50			Gravel content	0.39
293A:						
Andres--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
294A:						
Symerton------------	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
	Depth to saturated zone	0.14			Depth to saturated zone	0.01
294B:						
Symerton------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.53	Depth to saturated zone	0.01	Depth to saturated zone	0.14
294C2:						
Symerton------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.80	Depth to saturated zone	0.12	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.38

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
298A:						
Beecher	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
298B:						
Beecher	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
315A:						
Channahon	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
315B:						
Channahon	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	0.50			Too clayey	0.50
315C2:						
Channahon	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
318B:						
Lorenzo	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
					Gravel content	0.64
	Too sandy	0.50			Too sandy	0.50
329A:						
Will	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
			Ponding	1.00	Seepage	1.00
	Too sandy	1.00			Ponding	1.00
	Ponding	1.00			Gravel content	0.12
330A:						
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00	Ponding	1.00	Too clayey	1.00
	Ponding	1.00			Hard to compact	1.00
					Ponding	1.00
343A:						
Kane	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	1.00
					Seepage	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Depth to saturated zone	1.00
	Too sandy	1.00			Gravel content	0.01
354B:						
Hononegah	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
					Seepage	1.00
	Too sandy	1.00				

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
354D:						
Hononegah	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
			Slope	0.04	Too sandy	0.50
	Too sandy	0.50			Slope	0.04
	Slope	0.04				
356A:						
Elpaso	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
494B:						
Kankakee	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Content of large stones	0.78
	Content of large stones	0.78			Seepage	0.52
503A:						
Rockton	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	0.50			Too clayey	0.50
503B:						
Rockton	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	0.50			Too clayey	0.50
513A:						
Granby	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
			Ponding	1.00	Seepage	1.00
	Too sandy	1.00			Ponding	1.00
	Ponding	1.00				
516A:						
Faxon	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
530B:						
Ozaukee	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
530C2:						
Ozaukee	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.56	Depth to saturated zone	0.76
	Too clayey	0.50			Too clayey	0.50

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
530C3:						
Ozaukee	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.76	Depth to saturated zone	0.08	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.32
530D2:						
Ozaukee	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.56	Depth to saturated zone	0.76
	Too clayey	0.50	Slope	0.04	Too clayey	0.50
	Slope	0.04			Slope	0.04
530D3:						
Ozaukee	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.86
	Too clayey	0.50	Slope	0.04	Too clayey	0.50
	Slope	0.04			Slope	0.04
530E2:						
Ozaukee	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	0.56	Depth to saturated zone	0.76
	Too clayey	0.50			Too clayey	0.50
530F:						
Ozaukee	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
536:						
Dumps	Not rated		Not rated		Not rated	
541B:						
Graymont	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
541C2:						
Graymont	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.19	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.47
553A:						
Bryce	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00	Ponding	1.00	Too clayey	1.00
	Too clayey	1.00	Depth to bedrock	0.94	Hard to compact	1.00
	Ponding	1.00			Ponding	1.00
					Depth to bedrock	0.94

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
553A:						
Calamine-----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
	Too clayey	1.00	Ponding	1.00	Too clayey	1.00
	Ponding	1.00			Hard to compact	1.00
					Ponding	1.00
555A:						
Shadeland----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
556B:						
High Gap-----------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	0.50			Too clayey	0.50
570B:						
Martinsville--------	Very limited		Not limited		Not limited	
	Seepage, bottom layer	1.00				
570C2:						
Martinsville--------	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Seepage	0.22
570D2:						
Martinsville--------	Very limited		Somewhat limited		Somewhat limited	
	Seepage, bottom layer	1.00	Slope	0.04	Seepage	0.22
	Slope	0.04			Slope	0.04
594A:						
Reddick------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
614A:						
Chenoa-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
672A:						
Cresent------------	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
672B:						
Cresent------------	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
688B:						
Braidwood	Not limited		Not limited		Not limited	
688D:						
Braidwood	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.91	Slope	0.91	Slope	0.91
688G:						
Braidwood	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
740A:						
Darroch	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.22
741B:						
Oakville	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00			Seepage	1.00
741D:						
Oakville	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00	Slope	0.04	Seepage	1.00
	Slope	0.04			Slope	0.04
802B:						
Orthents, loamy	Not limited		Not limited		Not limited	
802D:						
Orthents, loamy	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.04	Slope	0.04	Slope	0.04
817A:						
Channahon	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Seepage, bottom layer	1.00			Seepage	0.22
Hesch	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
	Seepage, bottom layer	1.00	Depth to bedrock	1.00	Seepage	0.22
817B:						
Channahon	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Seepage, bottom layer	1.00			Seepage	0.22
Hesch	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.22

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
830:						
Landfills	Not rated		Not limited		Not rated	
863:						
Pits, clay	Not rated		Not rated		Not rated	
865:						
Pits, gravel	Not rated		Not rated		Not rated	
871D:						
Lenzburg	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Too clayey	0.50			Too clayey	0.50
871G:						
Lenzburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
1107A:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Too clayey	0.50
	Too clayey	0.50				
3073A:						
Ross	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
	Seepage, bottom layer	1.00				
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Too clayey	0.50
	Too clayey	0.50				
3451A:						
Lawson	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
3776A:						
Comfrey	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00		

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
4107A:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
4516A:						
Faxon	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Depth to bedrock	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
4904A:						
Muskego	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Organic matter content	1.00	Seepage	1.00	Hard to compact	1.00
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00
8073A:						
Ross	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
	Seepage, bottom layer	1.00				
8107A:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Too clayey	0.50
	Too clayey	0.50				
8404A:						
Titus	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Hard to compact	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
8451A:						
Lawson	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		

Table 18b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8776A:						
Comfrey-------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Too clayey	0.50
	Too clayey	0.50				

Table 19a.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
23A:						
Blount	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Organic matter content	0.12	Wetness	0.01	Wetness	0.01
	Too acid	0.50			Hard to reclaim (dense layer)	0.20
	Carbonate content	0.68				
	Water erosion	0.90				
23B:						
Blount	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Organic matter content	0.12	Wetness	0.01	Wetness	0.01
	Carbonate content	0.68			Hard to reclaim (dense layer)	0.05
	Water erosion	0.90				
	Too acid	0.99				
42A:						
Papineau	Fair		Fair		Fair	
	Too acid	0.92	Wetness	0.12	Wetness	0.12
	Carbonate content	0.97	Shrink-swell	0.84		
49A:						
Watseka	Poor		Fair		Poor	
	Too sandy	0.00	Wetness	0.14	Too sandy	0.00
	Wind erosion	0.00			Wetness	0.14
	Organic matter content	0.12				
	Too acid	0.84				
	Droughty	0.92				
69A:						
Milford	Fair		Poor		Poor	
	Too clayey	0.05	Wetness	0.00	Wetness	0.00
	Too acid	0.99	Low strength	0.00	Too clayey	0.04
	Water erosion	0.99	Shrink-swell	0.78		
88B:						
Sparta	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Wind erosion	0.00				
	Organic matter content	0.18				
91A:						
Swygert	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Organic matter content	0.12	Wetness	0.14	Wetness	0.14
	Carbonate content	0.80	Shrink-swell	0.24		
	Too acid	0.97				

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
91B:						
Swygert	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Organic matter content	0.12	Wetness	0.14	Wetness	0.14
			Shrink-swell	0.33		
	Carbonate content	0.80				
	Too acid	0.97				
91B2:						
Swygert	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Carbonate content	0.80	Wetness	0.14	Wetness	0.14
	Organic matter content	0.92	Shrink-swell	0.26		
91C2:						
Swygert	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Organic matter content	0.08	Wetness	0.14	Wetness	0.14
			Shrink-swell	0.47	Hard to reclaim (dense layer)	0.94
	Carbonate content	0.80				
	Water erosion	0.99				
93C2:						
Rodman	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Droughty	0.02			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.46				
	Organic matter content	0.50			Rock fragments	0.00
					Carbonate content	0.92
98B:						
Ade	Poor		Good		Fair	
	Wind erosion	0.00			Too sandy	0.08
	Too sandy	0.08				
	Organic matter content	0.18				
	Too acid	0.84				
125A:						
Selma	Good		Poor		Poor	
			Wetness	0.00	Hard to reclaim (dense layer)	0.00
			Shrink-swell	0.98		
					Wetness	0.00
132A:						
Starks	Fair		Fair		Fair	
	Water erosion	0.68	Wetness	0.04	Wetness	0.04
	Organic matter content	0.68			Too clayey	0.67
	Too clayey	0.98				
	Too acid	0.99				
146A:						
Elliott	Fair		Poor		Fair	
	Organic matter content	0.18	Low strength	0.00	Wetness	0.07
			Wetness	0.07	Too clayey	0.55
	Carbonate content	0.84	Shrink-swell	0.97		
	Too acid	0.84				
	Too clayey	0.92				
	Water erosion	0.99				

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
146B:						
Elliott	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength	0.00	Wetness	0.07
	Carbonate content	0.84	Wetness	0.07	Too clayey	0.55
	Water erosion	0.90	Shrink-swell	0.99	Hard to reclaim (dense layer)	0.90
	Too clayey	0.92				
148A:						
Proctor	Fair		Fair		Fair	
	Organic matter content	0.24	Shrink-swell	0.99	Too clayey	0.81
	Too clayey	0.98				
	Water erosion	0.99				
148B:						
Proctor	Fair		Good		Fair	
	Organic matter content	0.24			Too clayey	0.81
	Too clayey	0.98				
	Water erosion	0.99				
149A:						
Brenton	Fair		Fair		Fair	
	Water erosion	0.99	Wetness	0.14	Wetness	0.14
			Low strength	0.22		
			Shrink-swell	0.99		
151A:						
Ridgeville	Fair		Fair		Fair	
	Organic matter content	0.68	Wetness	0.14	Wetness	0.14
	Too acid	0.88				
152A:						
Drummer	Fair		Poor		Poor	
	Carbonate content	0.92	Wetness	0.00	Wetness	0.00
	Water erosion	0.99	Low strength	0.00		
			Shrink-swell	0.95		
184A:						
Roby	Fair		Fair		Fair	
	Organic matter content	0.12	Wetness	0.14	Wetness	0.14
	Too acid	0.74			Hard to reclaim (dense layer)	0.71
189A:						
Martinton	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.02
	Carbonate content	0.97	Wetness	0.14	Wetness	0.14
	Water erosion	0.99	Shrink-swell	0.89		
	Too acid	0.99				
189B:						
Martinton	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.02
	Organic matter content	0.12	Wetness	0.14	Wetness	0.14
	Carbonate content	0.97	Shrink-swell	0.87		
	Water erosion	0.99				
	Too acid	0.99				

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
201A:						
Gilford-------------	Good		Poor		Poor	
			Wetness	0.00	Wetness	0.00
223B:						
Varna---------------	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Carbonate content	0.97	Shrink-swell	0.97	Wetness	0.98
	Water erosion	0.99	Wetness	0.98		
	Too acid	0.99				
223B2:						
Varna---------------	Fair		Poor		Fair	
	Too clayey	0.08	Low strength	0.00	Too clayey	0.06
	Organic matter content	0.12	Wetness	0.98	Wetness	0.98
			Shrink-swell	0.99	Hard to reclaim (dense layer)	0.99
	Water erosion	0.90				
	Carbonate content	0.97				
223C2:						
Varna---------------	Fair		Poor		Fair	
	Too clayey	0.08	Low strength	0.00	Too clayey	0.06
	Organic matter content	0.68	Shrink-swell	0.95	Wetness	0.98
			Wetness	0.98		
	Carbonate content	0.97				
	Water erosion	0.99				
223C3:						
Varna---------------	Fair		Poor		Poor	
	Organic matter content	0.12	Low strength	0.00	Hard to reclaim (dense layer)	0.00
			Wetness	0.98		
	Too clayey	0.76			Too clayey	0.44
	Water erosion	0.90			Wetness	0.98
	Carbonate content	0.97				
228A:						
Nappanee------------	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Organic matter content	0.12	Wetness	0.04	Wetness	0.04
			Shrink-swell	0.87		
	Carbonate content	0.68				
	Water erosion	0.99				
228B:						
Nappanee------------	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Organic matter content	0.24	Wetness	0.04	Wetness	0.04
			Shrink-swell	0.87		
	Carbonate content	0.68				
	Water erosion	0.99				
232A:						
Ashkum--------------	Poor		Poor		Poor	
	Too clayey	0.00	Wetness	0.00	Wetness	0.00
	Organic matter content	0.18	Low strength	0.00	Too clayey	0.00
			Shrink-swell	0.60		
	Carbonate content	0.97				
	Water erosion	0.99				

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
235A:						
Bryce---------------	Poor		Poor		Poor	
	Too clayey	0.00	Wetness	0.00	Too clayey	0.00
	Too acid	0.97	Low strength	0.00	Wetness	0.00
	Carbonate content	0.97	Shrink-swell	0.14		
241D3:						
Chatsworth----------	Poor		Poor		Poor	
	Droughty	0.00	Low strength	0.00	Too clayey	0.00
	Too clayey	0.00	Wetness	0.68	Hard to reclaim (dense layer)	0.03
	Organic matter content	0.12	Shrink-swell	0.87	Wetness	0.68
	Carbonate content	0.97			Slope	0.96
	Water erosion	0.99				
241E3:						
Chatsworth----------	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Droughty	0.02	Wetness	0.68	Slope	0.00
	Organic matter content	0.12	Shrink-swell	0.87	Hard to reclaim (dense layer)	0.01
	Carbonate content	0.97	Slope	0.98	Wetness	0.68
	Water erosion	0.99				
241F:						
Chatsworth----------	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Slope	0.00
	Droughty	0.03	Slope	0.00	Too clayey	0.00
	Organic matter content	0.12	Wetness	0.68	Hard to reclaim (dense layer)	0.10
	Carbonate content	0.97	Shrink-swell	0.87	Wetness	0.68
241G:						
Chatsworth----------	Poor		Poor		Poor	
	Too clayey	0.00	Slope	0.00	Slope	0.00
	Droughty	0.04	Low strength	0.00	Too clayey	0.00
	Organic matter content	0.12	Wetness	0.68	Hard to reclaim (dense layer)	0.00
	Carbonate content	0.97	Shrink-swell	0.87	Wetness	0.68
	Water erosion	0.99				
290B:						
Warsaw--------------	Fair		Good		Poor	
	Organic matter content	0.50			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.68				
	Too acid	0.97				
290C2:						
Warsaw--------------	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Organic matter content	0.12			Rock fragments	0.00
	Carbonate content	0.92			Hard to reclaim (rock fragments)	0.00
	Too acid	0.95				
	Droughty	0.98				

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
293A:						
Andres--------------	Fair		Poor		Fair	
	Organic matter content	0.18	Low strength	0.00	Wetness	0.12
			Wetness	0.12	Too clayey	0.64
	Too clayey	0.82	Shrink-swell	0.96		
	Carbonate content	0.84				
	Water erosion	0.99				
294A:						
Symerton-----------	Fair		Fair		Good	
	Organic matter content	0.68	Shrink-swell	0.96		
	Carbonate content	0.97				
294B:						
Symerton-----------	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength	0.00	Rock fragments	0.12
			Wetness	0.99	Wetness	0.99
	Too acid	0.84				
	Water erosion	0.90				
	Carbonate content	0.97				
294C2:						
Symerton-----------	Fair		Fair		Fair	
	Organic matter content	0.68	Wetness	0.93	Wetness	0.93
			Shrink-swell	0.99		
	Too acid	0.84				
	Carbonate content	0.97				
	Water erosion	0.99				
298A:						
Beecher------------	Fair		Poor		Fair	
	Organic matter content	0.08	Low strength	0.00	Wetness	0.01
			Wetness	0.01	Too clayey	0.55
	Carbonate content	0.84	Shrink-swell	0.99	Hard to reclaim (dense layer)	0.97
	Water erosion	0.90				
	Too acid	0.92				
	Too clayey	0.92				
298B:						
Beecher------------	Fair		Poor		Poor	
	Too clayey	0.02	Wetness	0.00	Wetness	0.00
	Organic matter content	0.08	Low strength	0.00	Too clayey	0.01
					Hard to reclaim (dense layer)	0.94
	Carbonate content	0.84				
	Too acid	0.88				
	Water erosion	0.90				
315A:						
Channahon----------	Poor		Poor		Poor	
	Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
	Droughty	0.00	Low strength	0.00		
	Organic matter content	0.82	Shrink-swell	0.87		
315B:						
Channahon----------	Poor		Poor		Poor	
	Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
	Droughty	0.06	Low strength	0.00		
			Shrink-swell	0.94		

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
315C2:						
Channahon-----------	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
	Depth to bedrock	0.00	Low strength	0.00		
	Organic matter content	0.82	Shrink-swell	0.87		
318B:						
Lorenzo-------------	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Organic matter content	0.12			Rock fragments	0.00
	Carbonate content	0.46			Hard to reclaim (rock fragments)	0.00
	Droughty	0.55				
329A:						
Will----------------	Fair		Poor		Poor	
	Organic matter content	0.50	Wetness	0.00	Wetness	0.00
	Carbonate content	0.68			Hard to reclaim (rock fragments)	0.00
	Droughty	0.99			Hard to reclaim (dense layer)	0.10
330A:						
Peotone-------------	Poor		Poor		Poor	
	Too clayey	0.00	Wetness	0.00	Wetness	0.00
	Water erosion	0.99	Low strength	0.00	Too clayey	0.00
			Shrink-swell	0.12		
343A:						
Kane----------------	Fair		Fair		Poor	
	Organic matter content	0.12	Wetness	0.14	Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.46			Wetness	0.14
	Too acid	0.88			Hard to reclaim (dense layer)	0.84
354B:						
Hononegah-----------	Poor		Good		Fair	
	Wind erosion	0.00			Too sandy	0.08
	Droughty	0.00				
	Too sandy	0.08				
	Organic matter content	0.12				
	Carbonate content	0.68				
	Too acid	0.92				
354D:						
Hononegah-----------	Poor		Good		Poor	
	Wind erosion	0.00			Too sandy	0.00
	Droughty	0.00			Slope	0.96
	Too sandy	0.00				
	Organic matter content	0.24				
	Carbonate content	0.68				
	Too acid	0.84				

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
356A:						
Elpaso---------------	Fair		Poor		Poor	
	Organic matter content	0.24	Wetness	0.00	Wetness	0.00
	Too acid	0.92	Low strength	0.00	Too clayey	0.98
	Too clayey	0.98	Shrink-swell	0.87		
	Carbonate content	0.99				
	Water erosion	0.99				
494B:						
Kankakee------------	Fair		Fair		Poor	
	Organic matter content	0.12	Cobble content	0.01	Hard to reclaim (rock fragments)	0.00
	Cobble content	0.26			Rock fragments	0.00
	Too acid	0.99				
503A:						
Rockton-------------	Fair		Poor		Fair	
	Depth to bedrock	0.84	Depth to bedrock	0.00	Depth to bedrock	0.84
			Low strength	0.00		
			Shrink-swell	0.90		
503B:						
Rockton-------------	Fair		Poor		Fair	
	Depth to bedrock	0.65	Depth to bedrock	0.00	Depth to bedrock	0.65
	Too clayey	0.98	Low strength	0.00	Too clayey	0.76
	Droughty	0.99	Shrink-swell	0.80		
513A:						
Granby--------------	Poor		Poor		Poor	
	Too sandy	0.00	Wetness	0.00	Wetness	0.00
	Organic matter content	0.12			Too sandy	0.00
516A:						
Faxon---------------	Fair		Poor		Poor	
	Depth to bedrock	0.16	Depth to bedrock	0.00	Wetness	0.00
	Droughty	0.69	Wetness	0.00	Depth to bedrock	0.16
	Organic matter content	0.96	Low strength	0.00	Too clayey	0.73
			Shrink-swell	0.87		
	Too clayey	0.98				
530B:						
Ozaukee-------------	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength	0.00	Too clayey	0.19
			Wetness	0.98	Wetness	0.98
	Too clayey	0.32	Shrink-swell	0.99	Not hard to reclaim	0.99
	Carbonate content	0.68				
	Water erosion	0.90				
	Too acid	0.95				
530C2:						
Ozaukee-------------	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.01
	Organic matter content	0.12	Wetness	0.68	Hard to reclaim (dense layer)	0.35
	Carbonate content	0.68			Wetness	0.68
	Water erosion	0.90				

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
530C3:						
Ozaukee-------------	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength	0.00	Hard to reclaim (dense layer)	0.29
			Wetness	0.95		
	Carbonate content	0.68			Too clayey	0.57
	Water erosion	0.90			Wetness	0.95
	Too clayey	0.98			Rock fragments	0.97
530D2:						
Ozaukee-------------	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.01
	Organic matter content	0.12	Wetness	0.68	Hard to reclaim (dense layer)	0.35
	Carbonate content	0.68			Wetness	0.68
	Water erosion	0.90			Slope	0.96
	Too acid	0.95				
530D3:						
Ozaukee-------------	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength	0.00	Hard to reclaim (dense layer)	0.16
			Wetness	0.53		
	Carbonate content	0.68			Wetness	0.53
	Water erosion	0.90			Too clayey	0.57
	Too clayey	0.98			Slope	0.96
					Rock fragments	0.97
530E2:						
Ozaukee-------------	Fair		Poor		Poor	
	Too clayey	0.02	Low strength	0.00	Slope	0.00
	Organic matter content	0.12	Wetness	0.68	Too clayey	0.01
			Slope	0.98	Hard to reclaim (dense layer)	0.65
	Carbonate content	0.68				
	Water erosion	0.90			Wetness	0.68
530F:						
Ozaukee-------------	Fair		Poor		Poor	
	Too clayey	0.02	Low strength	0.00	Slope	0.00
	Organic matter content	0.24	Slope	0.00	Too clayey	0.01
			Wetness	0.98	Hard to reclaim (dense layer)	0.94
	Carbonate content	0.68				
	Water erosion	0.90			Wetness	0.98
536:						
Dumps---------------	Not rated		Not rated		Not rated	
541B:						
Graymont------------	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength	0.00	Wetness	0.98
			Wetness	0.98		
	Water erosion	0.90	No shrink-swell limitation	0.99		
	Carbonate content	0.97				
	Too acid	0.99				
541C2:						
Graymont------------	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength	0.00	Wetness	0.89
			Wetness	0.89		
	Water erosion	0.90	Shrink-swell	0.99		
	Carbonate content	0.97				

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
553A:						
Bryce	Poor		Poor		Poor	
	Too clayey	0.00	Wetness	0.00	Too clayey	0.00
	Droughty	0.85	Low strength	0.00	Wetness	0.00
	Too acid	0.97	Depth to bedrock	0.07		
			Shrink-swell	0.12		
Calamine	Poor		Poor		Poor	
	Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
	Droughty	0.21	Wetness	0.00	Wetness	0.00
	Depth to bedrock	0.79	Low strength	0.00	Depth to bedrock	0.79
			Shrink-swell	0.12		
555A:						
Shadeland	Fair		Poor		Fair	
	Organic matter content	0.02	Depth to bedrock	0.00	Wetness	0.04
			Low strength	0.00	Too acid	0.59
	Too acid	0.50	Wetness	0.04	Depth to bedrock	0.93
	Depth to bedrock	0.93	Shrink-swell	0.93		
	Water erosion	0.99				
556B:						
High Gap	Fair		Poor		Fair	
	Organic matter content	0.24	Depth to bedrock	0.00	Depth to bedrock	0.93
			Low strength	0.00		
	Depth to bedrock	0.93	Shrink-swell	0.98		
	Too acid	0.99				
570B:						
Martinsville	Fair		Fair		Fair	
	Too acid	0.39	Shrink-swell	0.98	Too acid	0.92
	Organic matter content	0.68				
	Water erosion	0.99				
570C2:						
Martinsville	Fair		Fair		Good	
	Organic matter content	0.68	Shrink-swell	0.98		
	Water erosion	0.99				
	Too acid	0.99				
570D2:						
Martinsville	Fair		Good		Fair	
	Too acid	0.39			Too acid	0.92
	Organic matter content	0.68			Slope	0.96
	Water erosion	0.99				
594A:						
Reddick	Fair		Poor		Poor	
	Carbonate content	0.84	Wetness	0.00	Wetness	0.00
	Water erosion	0.99	Low strength	0.00		
			Shrink-swell	0.87		

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
614A:						
Chenoa	Fair		Poor		Fair	
	Organic matter content	0.12	Low strength	0.00	Too clayey	0.14
			Wetness	0.14	Wetness	0.14
	Too clayey	0.18	Shrink-swell	0.90		
	Carbonate content	0.84				
	Water erosion	0.90				
672A:						
Cresent	Fair		Fair		Good	
	Too acid	0.84	Shrink-swell	0.99		
	Organic matter content	0.88				
672B:						
Cresent	Fair		Fair		Good	
	Too acid	0.84	Shrink-swell	0.99		
	Organic matter content	0.88				
688B:						
Braidwood	Fair		Poor		Fair	
	Organic matter content	0.68	Low strength	0.00	Hard to reclaim (dense layer)	0.03
	Water erosion	0.90			Carbonate content	0.96
	Carbonate content	0.92				
688D:						
Braidwood	Fair		Poor		Poor	
	Organic matter content	0.68	Low strength	0.00	Hard to reclaim (dense layer)	0.00
	Water erosion	0.90			Slope	0.09
	Carbonate content	0.92			Carbonate content	0.96
688G:						
Braidwood	Fair		Poor		Poor	
	Organic matter content	0.68	Low strength	0.00	Slope	0.00
			Slope	0.00	Hard to reclaim (dense layer)	0.00
	Water erosion	0.90				
	Carbonate content	0.92			Carbonate content	0.95
740A:						
Darroch	Fair		Fair		Fair	
	Organic matter content	0.12	Wetness	0.14	Wetness	0.14
	Carbonate content	0.68				
741B:						
Oakville	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Wind erosion	0.00			Too acid	0.88
	Organic matter content	0.18				
	Too acid	0.32				
	Droughty	0.60				

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
741D:						
Oakville	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Wind erosion	0.00			Slope	0.96
	Organic matter content	0.12				
	Droughty	0.54				
	Too acid	0.88				
802B:						
Orthents, loamy	Fair		Poor		Good	
	Organic matter content	0.68	Low strength	0.00		
			Shrink-swell	0.87		
	Water erosion	0.90				
802D:						
Orthents, loamy	Fair		Poor		Fair	
	Organic matter content	0.68	Low strength	0.00	Slope	0.96
			Shrink-swell	0.87		
	Water erosion	0.90				
817A:						
Channahon	Poor		Poor		Poor	
	Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
	Droughty	0.00				
	Too acid	0.61				
Hesch	Fair		Poor		Fair	
	Too acid	0.61	Depth to bedrock	0.00	Depth to bedrock	0.71
	Droughty	0.66				
	Organic matter content	0.68				
	Depth to bedrock	0.71				
817B:						
Channahon	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
	Depth to bedrock	0.00			Rock fragments	0.99
	Organic matter content	0.68				
	Too acid	0.97				
Hesch	Fair		Poor		Fair	
	Depth to bedrock	0.05	Depth to bedrock	0.00	Depth to bedrock	0.05
	Droughty	0.11				
	Organic matter content	0.68				
	Too acid	0.99				
830:						
Landfills	Not rated		Not rated		Not rated	
863:						
Pits, clay	Not rated		Not rated		Not rated	
865:						
Pits, gravel	Not rated		Not rated		Not rated	

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
871D:						
Lenzburg	Fair		Poor		Fair	
	Organic matter content	0.68	Low strength	0.00	Slope	0.04
	Water erosion	0.99	Shrink-swell	0.87	Rock fragments	0.72
					Hard to reclaim (rock fragments)	0.88
871G:						
Lenzburg	Fair		Poor		Poor	
	Organic matter content	0.68	Slope	0.00	Slope	0.00
			Low strength	0.00	Rock fragments	0.72
	Water erosion	0.99	Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.88
1107A:						
Sawmill	Fair		Poor		Poor	
	Too clayey	0.98	Wetness	0.00	Wetness	0.00
	Too acid	0.99	Low strength	0.00	Too clayey	0.98
			Shrink-swell	0.87		
3073A:						
Ross	Fair		Poor		Good	
	Organic matter content	0.88	Low strength	0.00		
	Too acid	0.99				
3107A:						
Sawmill	Fair		Poor		Poor	
	Too clayey	0.98	Wetness	0.00	Wetness	0.00
	Too acid	0.99	Low strength	0.00	Too clayey	0.98
			Shrink-swell	0.87		
3451A:						
Lawson	Fair		Poor		Fair	
	Water erosion	0.68	Low strength	0.00	Wetness	0.14
			Wetness	0.14		
3776A:						
Comfrey	Good		Poor		Poor	
			Wetness	0.00	Wetness	0.00
			Low strength	0.00		
			Shrink-swell	0.87		
4107A:						
Sawmill	Fair		Poor		Poor	
	Too clayey	0.98	Wetness	0.00	Wetness	0.00
	Too acid	0.99	Low strength	0.00	Too clayey	0.98
			Shrink-swell	0.87		
4516A:						
Faxon	Fair		Poor		Poor	
	Depth to bedrock	0.16	Depth to bedrock	0.00	Wetness	0.00
	Droughty	0.79	Wetness	0.00	Depth to bedrock	0.16
	Organic matter content	0.96	Low strength	0.00		
			Shrink-swell	0.87		

Table 19a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
4904A:						
Muskego-------------	Poor		Poor		Poor	
	Wind erosion	0.00	Wetness	0.00	Wetness	0.00
	Carbonate content	0.32	Low strength	0.22	Organic matter content	0.00
	Too acid	0.99				
Peotone-------------	Fair		Poor		Poor	
	Too clayey	0.24	Wetness	0.00	Wetness	0.00
	Water erosion	0.99	Low strength	0.00	Too clayey	0.24
			Shrink-swell	0.12		
8073A:						
Ross----------------	Good		Fair		Good	
			Low strength	0.78		
8107A:						
Sawmill-------------	Fair		Poor		Poor	
	Too clayey	0.98	Wetness	0.00	Wetness	0.00
			Low strength	0.00	Too clayey	0.98
			Shrink-swell	0.87		
8404A:						
Titus---------------	Fair		Poor		Poor	
	Too clayey	0.02	Wetness	0.00	Wetness	0.00
	Organic matter content	0.68	Low strength	0.00	Too clayey	0.01
			Shrink-swell	0.12		
8451A:						
Lawson--------------	Good		Poor		Fair	
			Low strength	0.00	Wetness	0.14
			Wetness	0.14		
8776A:						
Comfrey-------------	Good		Poor		Poor	
			Wetness	0.00	Wetness	0.00
			Low strength	0.00		
			Shrink-swell	0.87		

Table 19b.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
23A:				
Blount	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
23B:				
Blount	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
42A:				
Papineau	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
49A:				
Watseka	Poor		Fair	
	Bottom layer	0.00	Bottom layer	0.18
	Thickest layer	0.00	Thickest layer	0.25
69A:				
Milford	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
88B:				
Sparta	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.13
91A:				
Swygert	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
91B:				
Swygert	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
91B2:				
Swygert	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
91C2:				
Swygert	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
93C2:				
Rodman	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.39	Bottom layer	0.63
98B:				
Ade	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.14
125A:				
Selma	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
132A:				
Starks	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
146A:				
Elliott	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
146B:				
Elliott	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
148A:				
Proctor	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
148B:				
Proctor	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
149A:				
Brenton	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
151A:				
Ridgeville	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.06
152A:				
Drummer	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
184A:				
Roby	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
189A:				
Martinton-----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
189B:				
Martinton-----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
201A:				
Gilford------------	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.32
223B:				
Varna---------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
223B2:				
Varna---------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
223C2:				
Varna---------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
223C3:				
Varna---------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
228A:				
Nappanee------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
228B:				
Nappanee------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
232A:				
Ashkum--------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
235A:				
Bryce---------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
241D3:				
Chatsworth----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
241E3:				
Chatsworth----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
241F:				
Chatsworth----------	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
241G:				
Chatsworth----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
290B:				
Warsaw--------------	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.27	Bottom layer	0.27
290C2:				
Warsaw--------------	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.31	Bottom layer	0.07
293A:				
Andres--------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
294A:				
Symerton------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
294B:				
Symerton------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
294C2:				
Symerton------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
298A:				
Beecher-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
298B:				
Beecher-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
315A:				
Channahon-----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
315B:				
Channahon-----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
315C2:				
Channahon-----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
318B:				
Lorenzo-------------	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.35	Bottom layer	0.30
329A:				
Will----------------	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.20	Bottom layer	0.42
330A:				
Peotone-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
343A:				
Kane----------------	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.27	Bottom layer	0.30
354B:				
Hononegah-----------	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.22
	Bottom layer	0.00	Bottom layer	0.90
354D:				
Hononegah-----------	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.39
	Bottom layer	0.00	Bottom layer	0.90
356A:				
Elpaso--------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
494B:				
Kankakee------------	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
503A:				
Rockton-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
503B:				
Rockton-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
513A:				
Granby	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.38
516A:				
Faxon	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
530B:				
Ozaukee	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
530C2:				
Ozaukee	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
530C3:				
Ozaukee	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
530D2:				
Ozaukee	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
530D3:				
Ozaukee	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
530E2:				
Ozaukee	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
530F:				
Ozaukee	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
536:				
Dumps	Not rated		Not rated	
541B:				
Graymont	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
541C2:				
Graymont	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
553A:				
Bryce---------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Calamine------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
555A:				
Shadeland-----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
556B:				
High Gap------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
570B:				
Martinsville--------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
570C2:				
Martinsville--------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
570D2:				
Martinsville--------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
594A:				
Reddick-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
614A:				
Chenoa--------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
672A:				
Cresent-------------	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.30
672B:				
Cresent-------------	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.38
688B:				
Braidwood-----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
688D:				
Braidwood-----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
688G:				
Braidwood-----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
740A:				
Darroch-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
741B:				
Oakville------------	Poor		Fair	
	Bottom layer	0.00	Bottom layer	0.14
	Thickest layer	0.00	Thickest layer	0.14
741D:				
Oakville------------	Poor		Fair	
	Bottom layer	0.00	Bottom layer	0.14
	Thickest layer	0.00	Thickest layer	0.14
802B:				
Orthents, loamy-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
802D:				
Orthents, loamy-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
817A:				
Channahon-----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Hesch---------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
817B:				
Channahon-----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Hesch---------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
830:				
Landfills-----------	Not rated		Not rated	
863:				
Pits, clay----------	Not rated		Not rated	

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
865:				
Pits, gravel	Not rated		Not rated	
871D:				
Lenzburg	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
871G:				
Lenzburg	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
1107A:				
Sawmill	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3073A:				
Ross	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3107A:				
Sawmill	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3451A:				
Lawson	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3776A:				
Comfrey	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
4107A:				
Sawmill	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
4516A:				
Faxon	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
4904A:				
Muskego	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Peotone	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8073A:				
Ross	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 19b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
8107A:				
Sawmill	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8404A:				
Titus	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8451A:				
Lawson	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8776A:				
Comfrey	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 20a.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
23A:						
Blount	Somewhat limited		Very limited		Very limited	
	Seepage	0.02	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.04		
23B:						
Blount	Somewhat limited		Very limited		Very limited	
	Seepage	0.02	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.02		
42A:						
Papineau	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.04		
			Seepage	0.02		
49A:						
Watseka	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Seepage	0.27		
69A:						
Milford	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
88B:						
Sparta	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.17	Depth to water	1.00
91A:						
Swygert	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Hard to pack	0.13		
91B:						
Swygert	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Hard to pack	0.13		
91B2:						
Swygert	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Hard to pack	0.21		

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
91C2:						
Swygert	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Hard to pack	0.18		
93C2:						
Rodman	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.63	Depth to water	1.00
98B:						
Ade	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.18	Depth to water	1.00
125A:						
Selma	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	1.00		
			Ponding	1.00		
			Seepage	0.01		
132A:						
Starks	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.90		
146A:						
Elliott	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.41		
146B:						
Elliott	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.57		
148A:						
Proctor	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.51	Depth to water	1.00
148B:						
Proctor	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.58	Depth to water	1.00
149A:						
Brenton	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.63		
151A:						
Ridgeville	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Seepage	0.12		

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
152A:						
Drummer-------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Ponding	1.00		
184A:						
Roby----------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Seepage	0.04		
189A:						
Martinton-----------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
189B:						
Martinton-----------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
201A:						
Gilford-------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Ponding	1.00		
			Seepage	0.33		
223B:						
Varna---------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.02	Depth to saturated zone	0.68	Depth to water	1.00
223B2:						
Varna---------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.02	Depth to saturated zone	0.68	Depth to water	1.00
223C2:						
Varna---------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.02	Depth to saturated zone	0.68	Depth to water	1.00
223C3:						
Varna---------------	Not limited		Somewhat limited		Very limited	
			Depth to saturated zone	0.68	Depth to water	1.00
228A:						
Nappanee------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
228B:						
Nappanee------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
232A:						
Ashkum--------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Ponding	1.00		
235A:						
Bryce---------------	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Ponding	1.00		
			Hard to pack	0.31		
241D3:						
Chatsworth----------	Not limited		Somewhat limited		Very limited	
			Depth to saturated zone	0.98	Depth to water	1.00
			Hard to pack	0.43		
241E3:						
Chatsworth----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Depth to saturated zone	0.98	Depth to water	1.00
			Hard to pack	0.40		
241F:						
Chatsworth----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.28	Depth to saturated zone	0.98	Depth to water	1.00
			Hard to pack	0.38		
241G:						
Chatsworth----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.88	Depth to saturated zone	0.98	Depth to water	1.00
			Hard to pack	0.33		
290B:						
Warsaw--------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.28	Depth to water	1.00
290C2:						
Warsaw--------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.13	Depth to water	1.00
293A:						
Andres--------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.75		
294A:						
Symerton------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.85	Depth to water	1.00
			Depth to saturated zone	0.14		

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
294B:						
Symerton-----------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.88	Depth to water	1.00
			Depth to saturated zone	0.53		
294C2:						
Symerton-----------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.83	Depth to water	1.00
			Depth to saturated zone	0.80		
298A:						
Beecher------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.02	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.39		
298B:						
Beecher------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.02	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.28		
315A:						
Channahon----------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
	Seepage	0.02	Piping	0.20		
315B:						
Channahon----------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
	Seepage	0.02	Piping	0.31		
315C2:						
Channahon----------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
	Seepage	0.02	Piping	0.17		
318B:						
Lorenzo------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.31	Depth to water	1.00
329A:						
Will---------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Ponding	1.00		
			Seepage	0.43		
330A:						
Peotone------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Ponding	1.00		
			Hard to pack	0.19		

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
343A:						
Kane----------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Seepage	0.31		
354B:						
Hononegah-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.90	Depth to water	1.00
354D:						
Hononegah-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.90	Depth to water	1.00
356A:						
Elpaso--------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
			Piping	0.01		
494B:						
Kankakee------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Content of large stones	0.28	Depth to water	1.00
503A:						
Rockton-------------	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.74	Thin layer	0.74	Depth to water	1.00
	Seepage	0.72				
503B:						
Rockton-------------	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.83	Thin layer	0.83	Depth to water	1.00
	Seepage	0.72				
513A:						
Granby--------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Ponding	1.00		
			Seepage	0.38		
516A:						
Faxon---------------	Somewhat limited		Very limited		Very limited	
	Depth to bedrock	0.96	Depth to saturated zone	1.00	Depth to water	1.00
	Seepage	0.72	Ponding	1.00		
			Thin layer	0.96		
			Piping	0.01		
530B:						
Ozaukee-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.02	Depth to saturated zone	0.68	Depth to water	1.00
530C2:						
Ozaukee-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.02	Depth to saturated zone	0.98	Depth to water	1.00

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
530C3:						
Ozaukee	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.02	Depth to saturated zone	0.75	Depth to water	1.00
530D2:						
Ozaukee	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.02	Depth to saturated zone	0.98	Depth to water	1.00
530D3:						
Ozaukee	Somewhat limited		Very limited		Very limited	
	Seepage	0.02	Depth to saturated zone	1.00	Depth to water	1.00
530E2:						
Ozaukee	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Depth to saturated zone	0.98	Depth to water	1.00
	Seepage	0.02				
530F:						
Ozaukee	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.28	Depth to saturated zone	0.68	Depth to water	1.00
	Seepage	0.02				
536:						
Dumps	Not rated		Not rated		Not rated	
541B:						
Graymont	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
			Piping	0.26		
541C2:						
Graymont	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.86	Depth to water	1.00
			Piping	0.21		
553A:						
Bryce	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.02	Depth to saturated zone	1.00	Slow refill	0.96
	Depth to bedrock	0.01			Cutbanks cave	0.10
			Ponding	1.00		
			Thin layer	0.34		
			Hard to pack	0.29		
Calamine	Somewhat limited		Very limited		Somewhat limited	
	Depth to bedrock	0.06	Depth to saturated zone	1.00	Slow refill	0.96
	Seepage	0.02			Cutbanks cave	0.10
			Ponding	1.00		
			Thin layer	0.77		
			Hard to pack	0.31		
555A:						
Shadeland	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Depth to water	1.00
	Depth to bedrock	0.03				
			Piping	0.67		
			Thin layer	0.66		

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
556B:						
High Gap------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Thin layer	0.66	Depth to water	1.00
	Depth to bedrock	0.03	Piping	0.63		
570B:						
Martinsville--------	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
			Seepage	0.03		
570C2:						
Martinsville--------	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
			Seepage	0.03		
570D2:						
Martinsville--------	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
			Seepage	0.03		
594A:						
Reddick-------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
614A:						
Chenoa--------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.04	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.04		
672A:						
Cresent-------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.31	Depth to water	1.00
672B:						
Cresent-------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.38	Depth to water	1.00
688B:						
Braidwood-----------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	Depth to water	1.00
688D:						
Braidwood-----------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Piping	1.00	Depth to water	1.00
	Slope	0.02				
688G:						
Braidwood-----------	Somewhat limited		Very limited		Very limited	
	Slope	0.97	Piping	1.00	Depth to water	1.00
	Seepage	0.72				
740A:						
Darroch-------------	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	1.00		

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
741B:						
Oakville-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.18	Depth to water	1.00
741D:						
Oakville-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.18	Depth to water	1.00
802B:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.04	Piping	0.68	Depth to water	1.00
802D:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.04	Piping	0.68	Depth to water	1.00
817A:						
Channahon-----------	Somewhat limited		Very limited		Very limited	
	Seepage	0.54	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.50	Seepage	0.06		
Hesch---------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.81	Depth to water	1.00
	Depth to bedrock	0.08	Seepage	0.06		
817B:						
Channahon-----------	Somewhat limited		Very limited		Very limited	
	Depth to bedrock	0.66	Thin layer	1.00	Depth to water	1.00
	Seepage	0.54				
Hesch---------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.99	Depth to water	1.00
	Depth to bedrock	0.34				
830:						
Landfills-----------	Not rated		Not rated		Not rated	
863:						
Pits, clay----------	Not rated		Not rated		Not rated	
865:						
Pits, gravel--------	Not rated		Not rated		Not rated	
871D:						
Lenzburg------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.04	Piping	0.11	Depth to water	1.00
	Slope	0.02				
871G:						
Lenzburg------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.88	Piping	0.11	Depth to water	1.00
	Seepage	0.04				
1107A:						
Sawmill-------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
			Piping	0.03		

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
3073A:						
Ross	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.98	Depth to water	1.00
3107A:						
Sawmill	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
			Ponding	1.00	Cutbanks cave	0.10
			Piping	0.03		
3451A:						
Lawson	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
			Piping	0.87	Cutbanks cave	0.10
3776A:						
Comfrey	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
			Ponding	1.00	Cutbanks cave	0.10
			Piping	0.13		
4107A:						
Sawmill	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.07		
4516A:						
Faxon	Somewhat limited		Very limited		Very limited	
	Depth to bedrock	0.96	Ponding	1.00	Depth to water	1.00
	Seepage	0.72	Depth to saturated zone	1.00		
			Thin layer	0.96		
			Piping	0.02		
4904A:						
Muskego	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Organic matter content	1.0	Cutbanks cave	0.10
			Ponding	1.00		
			Depth to saturated zone	1.00		
Peotone	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to pack	0.18		
8073A:						
Ross	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00

Table 20a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8107A:						
Sawmill-------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
			Piping	0.03		
8404A:						
Titus---------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Ponding	1.00		
8451A:						
Lawson--------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.91		
8776A:						
Comfrey-------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
			Piping	0.13		

Table 20b.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. Dashes in the tile drains column indicate that drainage is generally not needed. See text for further explanation of ratings in this table)

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
23A:						
Blount	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Dense layer	0.50
					Too clayey	0.02
23B:						
Blount	Somewhat limited		Very limited		Very limited	
	Slope	0.16	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Dense layer	0.50
			Slope	0.16	Too clayey	0.02
42A:						
Papineau	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88	Too clayey	1.00
49A:						
Watseka	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Too sandy	1.00	Cutbanks cave	1.00
69A:						
Milford	Not limited		Very limited		Very limited	
			Water erosion	1.00	Ponding	1.00
			Ponding	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00		
88B:						
Sparta	Somewhat limited		Somewhat limited		---	
	Slope	0.26	Slope	0.26		
91A:						
Swygert	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88	Too clayey	0.32
91B:						
Swygert	Somewhat limited		Very limited		Very limited	
	Slope	0.16	Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88	Too clayey	0.32
			Slope	0.16		

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
91B2:						
Swygert	Somewhat limited		Very limited		Very limited	
	Slope	0.16	Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88	Too clayey	0.32
			Slope	0.16		
91C2:						
Swygert	Somewhat limited		Very limited		Very limited	
	Slope	0.63	Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88	Too clayey	0.08
			Slope	0.63		
93C2:						
Rodman	Somewhat limited		Somewhat limited		---	
	Slope	0.63	Slope	0.63		
			Water erosion	0.12		
98B:						
Ade	Somewhat limited		Very limited		---	
	Slope	0.26	Too sandy	1.00		
			Slope	0.26		
125A:						
Selma	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88	Cutbanks cave	1.00
132A:						
Starks	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	1.00
146A:						
Elliott	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Dense layer	0.50
146B:						
Elliott	Somewhat limited		Very limited		Very limited	
	Slope	0.16	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Dense layer	0.50
			Slope	0.16		
148A:						
Proctor	Not limited		Very limited		---	
			Water erosion	1.00		
148B:						
Proctor	Somewhat limited		Very limited		---	
	Slope	0.26	Water erosion	1.00		
			Slope	0.26		

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
149A:						
Brenton-------------	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	1.00
151A:						
Ridgeville----------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.12	Cutbanks cave	1.00
152A:						
Drummer-------------	Not limited		Very limited		Very limited	
			Water erosion	1.00	Ponding	1.00
			Ponding	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Cutbanks cave	1.00
184A:						
Roby----------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Too sandy	1.00	Cutbanks cave	1.00
			Water erosion	0.12		
189A:						
Martinton-----------	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00		
189B:						
Martinton-----------	Somewhat limited		Very limited		Very limited	
	Slope	0.16	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00		
			Slope	0.16		
201A:						
Gilford-------------	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Too sandy	1.00	Cutbanks cave	1.00
			Water erosion	0.12		
223B:						
Varna---------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Depth to saturated zone	0.99
			Depth to saturated zone	1.00	Dense layer	0.50
			Slope	0.16	Too clayey	0.03
223B2:						
Varna---------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Depth to saturated zone	0.99
			Depth to saturated zone	1.00	Dense layer	0.50
			Slope	0.16		

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
223C2:						
Varna---------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.63	Water erosion	1.00	Depth to saturated zone	0.99
			Depth to saturated zone	1.00	Dense layer	0.50
			Slope	0.63		
223C3:						
Varna---------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.63	Water erosion	1.00	Depth to saturated zone	0.99
			Depth to saturated zone	1.00	Dense layer	0.50
			Slope	0.63		
228A:						
Nappanee------------	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Dense layer	0.50
					Too clayey	0.32
228B:						
Nappanee------------	Somewhat limited		Very limited		Very limited	
	Slope	0.16	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Dense layer	0.50
			Slope	0.16	Too clayey	0.32
232A:						
Ashkum--------------	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88		
235A:						
Bryce---------------	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88	Too clayey	0.50
241D3:						
Chatsworth----------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Dense layer	0.50
			Slope	1.00	Too clayey	0.32
					Slope	0.04
241E3:						
Chatsworth----------	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Depth to saturated zone	1.00
			Slope	1.00	Slope	1.00
			Depth to saturated zone	1.00	Dense layer	0.50
					Too clayey	0.32

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
241F:						
Chatsworth	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88	Dense layer	0.50
					Too clayey	0.32
241G:						
Chatsworth	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
			Slope	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Dense layer	0.50
					Too clayey	0.32
290B:						
Warsaw	Somewhat limited		Somewhat limited		---	
	Slope	0.16	Water erosion	0.88		
			Slope	0.16		
290C2:						
Warsaw	Somewhat limited		Somewhat limited		---	
	Slope	0.63	Water erosion	0.88		
			Slope	0.63		
293A:						
Andres	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88		
294A:						
Symerton	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.01	Water erosion	0.88	Depth to saturated zone	0.85
			Slope	0.01		
294B:						
Symerton	Somewhat limited		Very limited		Very limited	
	Slope	0.26	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Water erosion	0.50	Depth to saturated zone	0.96
			Slope	0.26		
294C2:						
Symerton	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
			Slope	0.99		
			Water erosion	0.88		
298A:						
Beecher	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Dense layer	0.50

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
298B:						
Beecher	Somewhat limited Slope	 0.16	Very limited Water erosion Depth to saturated zone Slope	 1.00 1.00 0.16	Very limited Depth to saturated zone Dense layer	 1.00 0.50
315A:						
Channahon	Very limited Depth to hard bedrock Slope	 1.00 0.01	Very limited Depth to hard bedrock Water erosion Slope	 1.00 0.88 0.01	---	
315B:						
Channahon	Very limited Depth to hard bedrock Slope	 1.00 0.16	Very limited Depth to hard bedrock Water erosion Slope	 1.00 0.88 0.16	---	
315C2:						
Channahon	Very limited Depth to hard bedrock Slope	 1.00 0.63	Very limited Depth to hard bedrock Water erosion Slope	 1.00 0.88 0.63	---	
318B:						
Lorenzo	Somewhat limited Content of large stones Slope	 0.23 0.16	Somewhat limited Water erosion Content of large stones Slope	 0.50 0.23 0.16	---	
329A:						
Will	Not limited		Very limited Ponding Depth to saturated zone Too sandy Water erosion	 1.00 1.00 1.00 0.88	Very limited Ponding Depth to saturated zone Cutbanks cave	 1.00 1.00 1.00
330A:						
Peotone	Not limited		Very limited Water erosion Ponding Depth to saturated zone	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey	 1.00 1.00 0.02
343A:						
Kane	Not limited		Very limited Depth to saturated zone Too sandy Water erosion	 1.00 1.00 0.88	Very limited Depth to saturated zone Cutbanks cave	 1.00 1.00

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
354B:						
Hononegah	Somewhat limited		Very limited		---	
	Slope	0.26	Too sandy	1.00		
			Slope	0.26		
354D:						
Hononegah	Very limited		Very limited		---	
	Slope	1.00	Slope	1.00		
356A:						
Elpaso	Not limited		Very limited		Very limited	
			Water erosion	1.00	Ponding	1.00
			Ponding	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00		
494B:						
Kankakee	Very limited		Very limited		---	
	Content of large stones	1.00	Content of large stones	1.00		
	Slope	0.16	Water erosion	0.88		
			Slope	0.16		
503A:						
Rockton	Very limited		Very limited		---	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00		
	Slope	0.01	Water erosion	0.88		
			Slope	0.01		
503B:						
Rockton	Very limited		Very limited		---	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00		
	Slope	0.16	Water erosion	0.88		
			Slope	0.16		
513A:						
Granby	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Too sandy	1.00	Cutbanks cave	1.00
516A:						
Faxon	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88		
530B:						
Ozaukee	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Water erosion	1.00	Depth to saturated zone	0.99
			Depth to saturated zone	1.00	Dense layer	0.50
			Slope	0.16		

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
530C2:						
Ozaukee	Somewhat limited		Very limited		Very limited	
	Slope	0.63	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Dense layer	0.50
			Slope	0.63		
530C3:						
Ozaukee	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.63	Water erosion	1.00	Depth to saturated zone	0.99
			Depth to saturated zone	1.00	Dense layer	0.50
			Slope	0.63		
530D2:						
Ozaukee	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Dense layer	0.50
			Slope	1.00	Slope	0.04
530D3:						
Ozaukee	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Dense layer	0.50
			Slope	1.00	Slope	0.04
530E2:						
Ozaukee	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Depth to saturated zone	1.00
			Slope	1.00	Slope	1.00
			Depth to saturated zone	1.00	Dense layer	0.50
530F:						
Ozaukee	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
			Slope	1.00	Depth to saturated zone	0.99
			Depth to saturated zone	1.00	Dense layer	0.50
536:						
Dumps	Not rated		Not rated		Not rated	
541B:						
Graymont	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.26	Water erosion	1.00	Depth to saturated zone	0.99
			Depth to saturated zone	1.00		
			Slope	0.26		
541C2:						
Graymont	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Water erosion	1.00	Depth to saturated zone	0.99
			Depth to saturated zone	1.00		
			Slope	0.99		

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
553A:						
Bryce	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88	Too clayey	0.50
Calamine	Somewhat limited		Very limited		Very limited	
	Depth to soft bedrock	0.20	Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88	Too clayey	0.50
			Depth to soft bedrock	0.20	Depth to soft bedrock	0.20
555A:						
Shadeland	Somewhat limited		Very limited		Very limited	
	Depth to soft bedrock	0.06	Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00	Depth to soft bedrock	0.06
			Depth to soft bedrock	0.06		
556B:						
High Gap	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.26	Water erosion	0.88	Depth to saturated zone	0.47
	Depth to soft bedrock	0.06	Slope	0.26	Depth to soft bedrock	0.06
			Depth to soft bedrock	0.06		
570B:						
Martinsville	Somewhat limited		Very limited		---	
	Slope	0.16	Water erosion	1.00		
			Slope	0.16		
570C2:						
Martinsville	Somewhat limited		Very limited		---	
	Slope	0.63	Water erosion	1.00		
			Slope	0.63		
570D2:						
Martinsville	Very limited		Very limited		---	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
594A:						
Reddick	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88		
614A:						
Chenoa	Not limited		Very limited		Very limited	
			Water erosion	1.00	Depth to saturated zone	1.00
			Depth to saturated zone	1.00		

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
672A:						
Cresent------------	Somewhat limited		Somewhat limited		---	
	Slope	0.01	Water erosion	0.88		
			Slope	0.01		
672B:						
Cresent------------	Somewhat limited		Somewhat limited		---	
	Slope	0.26	Water erosion	0.88		
			Slope	0.26		
688B:						
Braidwood----------	Somewhat limited		Very limited		---	
	Slope	0.37	Water erosion	1.00		
			Slope	0.37		
688D:						
Braidwood----------	Very limited		Very limited		---	
	Slope	1.00	Water erosion	1.00		
			Slope	1.00		
688G:						
Braidwood----------	Very limited		Very limited		---	
	Slope	1.00	Water erosion	1.00		
	Content of large stones	0.01	Slope	1.00		
			Content of large stones	0.01		
740A:						
Darroch------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88		
741B:						
Oakville-----------	Somewhat limited		Very limited		---	
	Slope	0.26	Too sandy	1.00		
			Slope	0.26		
741D:						
Oakville-----------	Very limited		Very limited		---	
	Slope	1.00	Too sandy	1.00		
			Slope	1.00		
802B:						
Orthents, loamy-----	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.26	Water erosion	1.00	Depth to saturated zone	0.45
			Slope	0.26		
802D:						
Orthents, loamy-----	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Water erosion	1.00	Depth to saturated zone	0.45
			Slope	1.00	Slope	0.04
817A:						
Channahon----------	Very limited		Very limited		---	
	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00		
	Slope	0.01	Slope	0.01		

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
817A:						
Hesch	Somewhat limited		Somewhat limited		---	
	Depth to soft bedrock	0.29	Depth to soft bedrock	0.29		
	Slope	0.01	Water erosion	0.12		
			Slope	0.01		
817B:						
Channahon	Very limited		Very limited		---	
	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00		
	Slope	0.37	Slope	0.37		
Hesch	Somewhat limited		Somewhat limited		---	
	Depth to soft bedrock	0.95	Depth to soft bedrock	0.95		
	Slope	0.37	Slope	0.37		
			Water erosion	0.12		
830:						
Landfills	Not rated		Not rated		Not rated	
863:						
Pits, clay	Not rated		Not rated		Not rated	
865:						
Pits, gravel	Not rated		Not rated		Not rated	
871D:						
Lenzburg	Very limited		Very limited		---	
	Slope	1.00	Water erosion	1.00		
	Content of large	0.10	Slope	1.00		
			Content of large stones	0.10		
871G:						
Lenzburg	Very limited		Very limited		---	
	Slope	1.00	Water erosion	1.00		
	Content of large	0.10	Slope	1.00		
			Content of large stones	0.10		
1107A:						
Sawmill	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.50	Frequent flooding	0.80
3073A:						
Ross	Somewhat limited		Somewhat limited		---	
	Slope	0.01	Water erosion	0.88		
			Slope	0.01		
3107A:						
Sawmill	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.50	Frequent flooding	0.80

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3451A:						
Lawson---------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88	Frequent flooding	0.80
3776A:						
Comfrey--------------	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88	Frequent flooding	0.80
4107A:						
Sawmill--------------	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.50	Frequent flooding	0.80
4516A:						
Faxon----------------	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88		
4904A:						
Muskego--------------	Not limited		Not rated		Very limited	
					Ponding	1.00
					Depth to saturated zone	1.00
Peotone--------------	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.12	Too clayey	0.02
8073A:						
Ross-----------------	Somewhat limited		Somewhat limited		---	
	Slope	0.01	Water erosion	0.88		
			Slope	0.01		
8107A:						
Sawmill--------------	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.50	Occasional flooding	0.60
8404A:						
Titus----------------	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88	Occasional flooding	0.60

Table 20b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
8451A:						
Lawson----------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88	Occasional flooding	0.60
8776A:						
Comfrey---------------	Not limited		Very limited		Very limited	
			Ponding	1.00	Ponding	1.00
			Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Water erosion	0.88	Occasional flooding	0.60

Table 20c.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
23A:				
Blount	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
23B:				
Blount	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Water erosion	1.00		
42A:				
Papineau	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
49A:				
Watseka	Very limited		Very limited	
	Wind erosion	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
	Limited available water capacity	1.00		
69A:				
Milford	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
88B:				
Sparta	Very limited		Not limited	
	Wind erosion	1.00		
	Limited available water capacity	1.00		
91A:				
Swygert	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Limited available water capacity	0.07		
91B:				
Swygert	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Limited available water capacity	0.11		

Table 20c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
91B2:				
Swygert	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Limited available water capacity	0.31		
91C2:				
Swygert	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Limited available water capacity	0.52		
93C2:				
Rodman	Very limited		Not limited	
	Limited available water capacity	1.00		
98B:				
Ade	Very limited		Not limited	
	Wind erosion	1.00		
	Limited available water capacity	0.99		
125A:				
Selma	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
132A:				
Starks	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
146A:				
Elliott	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
146B:				
Elliott	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
148A:				
Proctor	Not limited		Not limited	
148B:				
Proctor	Not limited		Not limited	
149A:				
Brenton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 20c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
151A:				
Ridgeville	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
152A:				
Drummer	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
184A:				
Roby	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Limited available water capacity	0.11		
189A:				
Martinton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
189B:				
Martinton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
201A:				
Gilford	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
223B:				
Varna	Not limited		Not limited	
223B2:				
Varna	Not limited		Not limited	
223C2:				
Varna	Not limited		Not limited	
223C3:				
Varna	Very limited		Not limited	
	Water erosion	1.00		
	Limited available water capacity	0.89		
228A:				
Nappanee	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Limited available water capacity	0.47		

Table 20c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
228B:				
Nappanee	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Water erosion	1.00		
	Limited available water capacity	0.44		
232A:				
Ashkum	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
235A:				
Bryce	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Limited available water capacity	0.68		
241D3:				
Chatsworth	Very limited		Very limited	
	Restricted permeability	1.00	Restricted permeability	1.00
	Limited available water capacity	1.00		
	Water erosion	1.00		
	Slope	0.22		
241E3:				
Chatsworth	Very limited		Very limited	
	Restricted permeability	1.00	Restricted permeability	1.00
	Limited available water capacity	1.00		
	Water erosion	1.00		
	Slope	1.00		
241F:				
Chatsworth	Very limited		Very limited	
	Restricted permeability	1.00	Restricted permeability	1.00
	Limited available water capacity	1.00		
	Slope	1.00		
241G:				
Chatsworth	Very limited		Very limited	
	Restricted permeability	1.00	Restricted permeability	1.00
	Limited available water capacity	1.00		
	Slope	1.00		
290B:				
Warsaw	Not limited		Not limited	

Table 20c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
290C2:				
Warsaw	Somewhat limited		Not limited	
	Limited available water capacity	0.41		
293A:				
Andres	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
294A:				
Symerton	Not limited		Not limited	
294B:				
Symerton	Not limited		Not limited	
294C2:				
Symerton	Somewhat limited		Not limited	
	Slope	0.06		
	Limited available water capacity	0.05		
298A:				
Beecher	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
298B:				
Beecher	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
315A:				
Channahon	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Limited available water capacity	1.00		
315B:				
Channahon	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Limited available water capacity	1.00		
315C2:				
Channahon	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Limited available water capacity	1.00		
318B:				
Lorenzo	Very limited		Not limited	
	Limited available water capacity	1.00		

Table 20c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation: Rating class and limiting features	Value	Drip or trickle irrigation: Rating class and limiting features	Value
329A:				
Will	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Limited available water capacity	0.33		
330A:				
Peotone	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
343A:				
Kane	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
354B:				
Hononegah	Very limited		Not limited	
	Sandy surface layer	1.00		
	Wind erosion	1.00		
	Limited available water capacity	1.00		
354D:				
Hononegah	Very limited		Not limited	
	Sandy surface layer	1.00		
	Wind erosion	1.00		
	Limited available water capacity	1.00		
	Slope	0.22		
356A:				
Elpaso	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
494B:				
Kankakee	Somewhat limited		Not limited	
	Content of large stones	0.50		
	Limited available water capacity	0.33		
503A:				
Rockton	Somewhat limited		Not limited	
	Depth to bedrock	0.90		
503B:				
Rockton	Somewhat limited		Not limited	
	Depth to bedrock	0.99		
	Limited available water capacity	0.01		

Table 20c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation: Rating class and limiting features	Value	Drip or trickle irrigation: Rating class and limiting features	Value
513A:				
Granby	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Limited available water capacity	1.00		
516A:				
Faxon	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00		
	Limited available water capacity	0.66		
530B:				
Ozaukee	Very limited		Not limited	
	Water erosion	1.00		
530C2:				
Ozaukee	Very limited		Not limited	
	Water erosion	1.00		
	Limited available water capacity	0.06		
530C3:				
Ozaukee	Very limited		Not limited	
	Water erosion	1.00		
	Limited available water capacity	0.30		
530D2:				
Ozaukee	Very limited		Not limited	
	Water erosion	1.00		
	Slope	0.22		
	Limited available water capacity	0.06		
530D3:				
Ozaukee	Very limited		Not limited	
	Water erosion	1.00		
	Limited available water capacity	0.42		
	Slope	0.22		
530E2:				
Ozaukee	Very limited		Not limited	
	Water erosion	1.00		
	Slope	1.00		
	Limited available water capacity	0.01		
530F:				
Ozaukee	Very limited		Not limited	
	Slope	1.00		
	Water erosion	1.00		

Table 20c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
536:				
Dumps	Not rated		Not rated	
541B:				
Graymont	Not limited		Not limited	
541C2:				
Graymont	Very limited		Not limited	
	Water erosion	1.00		
	Slope	0.06		
553A:				
Bryce	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Limited available water capacity	0.64		
	Depth to bedrock	0.20		
Calamine	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Limited available water capacity	1.00		
	Depth to bedrock	0.94		
555A:				
Shadeland	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	0.80		
556B:				
High Gap	Somewhat limited		Not limited	
	Depth to bedrock	0.80		
570B:				
Martinsville	Very limited		Not limited	
	Water erosion	1.00		
570C2:				
Martinsville	Very limited		Not limited	
	Water erosion	1.00		
570D2:				
Martinsville	Very limited		Not limited	
	Water erosion	1.00		
	Slope	0.22		
594A:				
Reddick	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
614A:				
Chenoa	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 20c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
672A:				
Cresent	Not limited		Not limited	
672B:				
Cresent	Not limited		Not limited	
688B:				
Braidwood	Very limited		Not limited	
	Water erosion	1.00		
688D:				
Braidwood	Very limited		Not limited	
	Water erosion	1.00		
	Slope	0.94		
688G:				
Braidwood	Very limited		Not limited	
	Slope	1.00		
	Water erosion	1.00		
	Limited available water capacity	0.01		
740A:				
Darroch	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
741B:				
Oakville	Very limited		Not limited	
	Wind erosion	1.00		
	Limited available water capacity	1.00		
741D:				
Oakville	Very limited		Not limited	
	Wind erosion	1.00		
	Limited available water capacity	1.00		
	Slope	0.22		
802B:				
Orthents, loamy	Very limited		Not limited	
	Water erosion	1.00		
802D:				
Orthents, loamy	Very limited		Not limited	
	Water erosion	1.00		
	Slope	0.22		
817A:				
Channahon	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Limited available water capacity	1.00		
Hesch	Somewhat limited		Not limited	
	Depth to bedrock	0.97		
	Limited available water capacity	0.71		

Table 20c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
817B:				
Channahon	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Limited available water capacity	1.00		
Hesch	Very limited		Not limited	
	Depth to bedrock	1.00		
	Limited available water capacity	1.00		
830:				
Landfills	Not rated		Not rated	
863:				
Pits, clay	Not rated		Not rated	
865:				
Pits, gravel	Not rated		Not rated	
871D:				
Lenzburg	Very limited		Not limited	
	Water erosion	1.00		
	Slope	0.98		
871G:				
Lenzburg	Very limited		Not limited	
	Slope	1.00		
	Water erosion	1.00		
1107A:				
Sawmill	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
3073A:				
Ross	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
3107A:				
Sawmill	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
3451A:				
Lawson	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
3776A:				
Comfrey	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 20c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
4107A:				
Sawmill	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
4516A:				
Faxon	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00		
	Limited available water capacity	0.47		
4904A:				
Muskego	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Peotone	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
8073A:				
Ross	Not limited		Not limited	
8107A:				
Sawmill	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
8404A:				
Titus	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
8451A:				
Lawson	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
8776A:				
Comfrey	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 21.--Engineering Index Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
23A:												
Blount----------	0-7	Silt loam	CL	A-4, A-6	0	0-5	95-100	95-100	90-100	80-95	25-40	8-20
	7-13	Silt loam	CL	A-4, A-6	0	0-5	95-100	95-100	90-100	80-95	20-35	8-18
	13-26	Silty clay loam, silty clay, clay loam	CL, CH	A-6, A-7-6	0-1	0-5	95-100	85-98	70-97	65-95	35-60	15-35
	26-32	Silty clay loam, clay loam, silty clay	ML, MH, CL, CH	A-6, A-7-6	0-1	0-5	95-100	80-95	65-93	60-90	35-55	10-30
	32-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-10	90-100	80-93	65-92	60-90	30-50	10-25
23B:												
Blount----------	0-6	Silt loam	CL	A-4, A-6	0	0-5	95-100	95-100	90-100	80-95	25-40	8-20
	6-10	Silt loam	CL	A-4, A-6	0	0-5	95-100	95-100	90-100	80-95	20-35	8-18
	10-23	Silty clay loam, silty clay, clay loam	CL, CH	A-6, A-7-6	0-1	0-5	95-100	85-98	70-97	65-95	35-60	15-35
	23-34	Silty clay loam, clay loam, silty clay	CL, ML, CH, MH	A-6, A-7-6	0-1	0-5	95-100	80-95	65-93	60-90	35-55	10-30
	34-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-10	90-100	80-93	65-92	60-90	30-50	10-25
42A:												
Papineau--------	0-10	Sandy loam	SC, SC-SM	A-2-4, A-4	0	0	100	90-100	65-85	30-50	15-25	5-15
	10-13	Loam, sandy clay loam	CL, SM, SC	A-6, A-4	0	0	100	90-100	70-90	35-60	25-35	5-15
	13-32	Clay loam, sandy clay loam, loam	SC, CL	A-6	0	0	100	90-100	70-95	35-60	31-39	11-18
	32-41	Silty clay, clay	CH, MH, CL	A-7-5, A-7-6	0	0	100	90-100	85-100	75-100	47-75	20-35
	41-60	Silty clay, clay	CL, MH, CH	A-7-5, A-7-6	0	0	100	90-100	85-100	75-100	45-70	18-33

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
49A:												
Watseka---------	0-10	Loamy fine sand	SC-SM, SM	A-2-4	0	0	100	95-100	80-100	10-30	10-25	NP-5
	10-32	Fine sand, sand, loamy fine sand	SP, SM, SP-SM	A-2-4, A-3	0	0	95-100	90-100	60-80	3-25	5-20	NP-4
	32-60	Fine sand, sand, loamy fine sand	SP, SM, SP-SM	A-2-4, A-3	0	0	90-100	90-100	60-80	3-25	0-20	NP-4
69A:												
Milford---------	0-9	Silty clay loam	CH, CL, MH	A-7-6, A-7-5	0	0	100	95-100	90-100	80-95	40-55	20-30
	9-22	Silty clay	CL, MH, CH	A-7-6	0	0	100	95-100	90-100	80-95	45-60	25-35
	22-50	Silty clay, silty clay loam, clay loam	CL, CH, MH	A-7-6, A-7-5	0	0	100	95-100	90-100	75-100	40-60	20-40
	50-60	Stratified sandy loam to silty clay loam	CL, SC, ML	A-6, A-7-6, A-7-5	0	0	95-100	95-100	90-100	45-100	25-50	10-30
88B:												
Sparta----------	0-13	Loamy fine sand	SM, SP-SM	A-2-4	0	0	90-100	85-100	50-95	10-30	2-18	NP-4
	13-71	Loamy fine sand, loamy sand, fine sand	SM, SP-SM	A-2-4, A-3	0	0	90-100	85-100	50-95	5-30	0-14	NP
	71-80	Stratified sand to loamy fine sand	SM, SP-SM, SP	A-2-4, A-3	0	0	90-100	85-100	50-95	4-25	0-18	NP-4
91A:												
Swygert---------	0-12	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	98-100	95-100	85-98	35-45	15-21
	12-26	Silty clay, clay	CH, CL, MH	A-7-6	0	0	100	98-100	95-100	85-98	45-60	22-35
	26-51	Silty clay, clay	CL, CH, MH	A-7-6	0	0-2	97-100	90-100	85-100	75-95	45-55	20-32
	51-60	Silty clay, clay, silty clay loam	CL, CH, MH	A-7-6	0	0-3	95-100	85-100	80-100	70-95	45-60	20-32

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
91B:												
Swygert---------	0-11	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	98-100	95-100	85-98	35-45	15-21
	11-23	Silty clay, clay	CH, CL, MH	A-7-6	0	0	100	98-100	95-100	85-98	45-60	22-35
	23-45	Silty clay, clay	CL, CH, MH	A-7-6	0	0-2	97-100	90-100	85-100	75-95	45-55	20-32
	45-60	Silty clay, clay, silty clay loam	CL, CH, MH	A-7-6	0	0-3	95-100	85-100	80-100	70-95	45-60	20-32
91B2:												
Swygert---------	0-7	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	98-100	95-100	85-98	39-46	18-25
	7-30	Silty clay, clay	CH, CL, MH	A-7-6	0	0	100	98-100	95-100	85-98	45-60	22-35
	30-48	Silty clay, clay	CL, CH, MH	A-7-6	0	0-2	97-100	90-100	85-100	75-95	45-55	20-32
	48-60	Silty clay, clay, silty clay loam	CL, CH, MH	A-7-6	0	0-3	95-100	85-100	80-100	70-95	45-60	20-32
91C2:												
Swygert---------	0-7	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	98-100	95-100	85-98	39-46	18-25
	7-18	Silty clay, clay	CH, CL, MH	A-7-6	0	0	100	98-100	95-100	85-98	45-60	22-35
	18-36	Silty clay, clay	CL, CH, MH	A-7-6	0	0-2	97-100	90-100	85-100	75-95	45-55	20-32
	36-60	Silty clay, clay, silty clay loam	CL, CH, MH	A-7-6	0	0-3	95-100	85-100	80-100	70-95	45-60	20-32
93C2:												
Rodman----------	0-8	Gravelly loam	CL-ML, ML, SC-SM, SC	A-4	0	0-2	75-95	65-80	60-75	35-65	0-30	3-9
	8-12	Gravelly loam, sandy loam, loam	CL-ML, SM, ML, SC, SC-SM	A-1-b, A-2-4, A-4	0	0-2	70-95	50-80	40-75	20-55	0-30	NP-10
	12-60	Stratified very gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-1	1-5	30-70	15-50	7-20	2-15	0-14	NP

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
98B:												
Ade-------------	0-22	Loamy fine sand	SP-SM, SM	A-2-4	0	0	100	100	65-90	10-35	2-18	NP-4
	22-29	Fine sand, loamy fine sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	100	65-90	3-20	2-18	NP-4
	29-60	Stratified sand to fine sandy loam	SM, SP-SM, SP	A-2-4, A-3	0	0	100	100	65-90	2-35	3-20	NP-5
	60-80	Fine sand	SP-SM, SP, SM	A-2-4, A-3	0	0	100	100	60-85	2-15	0-10	NP
125A:												
Selma-----------	0-6	Loam	ML, CL	A-4, A-6	0	0	100	95-100	80-100	55-85	25-35	8-15
	6-13	Clay loam	CL, ML	A-6, A-7-6	0	0	100	95-100	80-100	55-85	30-43	11-21
	13-44	Loam, silty clay loam, sandy loam, clay loam	CL, SC	A-6, A-4	0	0	100	85-100	80-95	38-85	23-41	7-20
	44-80	Stratified sand to silt loam	SM, SC-SM, SC, CL-ML, ML	A-4, A-2-4	0	0	90-100	80-100	60-90	10-70	12-28	1-9
132A:												
Starks----------	0-10	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15
	10-14	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15
	14-31	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-25
	31-43	Clay loam, silt loam, sandy loam	CL, SC, ML, SM	A-6, A-4	0	0	95-100	90-100	70-95	40-85	25-40	8-20
	43-60	Stratified loamy sand to clay loam	SC, CL, SC-SM, SM	A-2-4, A-4, A-6, A-2-6	0-1	0-5	90-100	80-100	65-90	15-80	5-30	NP-15
146A:												
Elliott---------	0-6	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	29-37	7-15
	6-11	Silty clay loam	CL	A-7-6	0	0	100	100	95-100	85-100	40-46	15-19
	11-16	Silty clay	CH, CL	A-7-6	0	0	100	95-100	90-100	85-100	42-56	18-30
	16-41	Silty clay loam	CL	A-6, A-7-6	0	0-1	95-100	85-98	80-95	70-95	33-42	12-20
	41-60	Silty clay loam	CL	A-6	0	0-3	95-100	85-98	80-95	70-95	31-37	10-17
146B:												
Elliott---------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	29-37	7-15
	9-13	Silty clay loam	CL	A-7-6	0	0	100	100	95-100	85-100	40-46	15-19
	13-17	Silty clay loam, silty clay	CL, CH	A-7-6	0	0	100	95-100	90-100	85-100	40-52	15-28
	17-35	Silty clay loam	CL	A-6, A-7-6	0	0-1	95-100	85-98	80-95	70-95	33-42	12-20
	35-60	Silty clay loam	CL	A-6	0	0-3	95-100	85-98	80-95	70-95	31-37	10-17

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
148A:												
Proctor---------	0-11	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
	11-28	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	25-50	10-25
	28-33	Loam, clay loam, sandy loam	CL, CL-ML, SC, SC-SM	A-2-6, A-4, A-6, A-7-6	0	0	90-100	85-100	75-100	30-85	20-45	5-25
	33-60	Stratified loam to loamy sand	CL, CL-ML, SC, SC-SM	A-4, A-6, A-2-4, A-2-6	0	0	85-100	80-100	50-100	15-85	20-40	5-20
148B:												
Proctor---------	0-11	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	90-100	25-40	10-20
	11-28	Silty clay loam, silt loam	CL	A-6, A-7-6, A-4, A-5	0	0	100	100	95-100	90-100	25-50	10-25
	28-33	Loam, clay loam, sandy loam	CL, CL-ML, SC, SC-SM	A-2-4, A-2-6, A-4, A-6, A-7-6	0	0	90-100	85-100	75-100	30-85	20-45	5-25
	33-60	Stratified loam to loamy sand	CL, CL-ML, SC, SC-SM	A-4, A-6, A-2-4, A-2-6	0	0	85-100	80-100	50-100	15-85	20-40	5-20
149A:												
Brenton---------	0-12	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	85-100	30-40	8-15
	12-28	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	85-100	35-50	10-25
	28-44	Clay loam, silt loam, sandy loam	CL, SC, ML, SM	A-6, A-7-6	0	0	100	95-100	90-100	40-85	30-45	10-20
	44-60	Stratified loamy sand to clay loam	CL, SC, SC-SM, CL-ML	A-2-4, A-2-6, A-4, A-6	0	0	95-100	80-100	80-100	15-85	20-35	5-20
151A:												
Ridgeville------	0-16	Fine sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	100	100	75-100	20-50	15-25	2-10
	16-40	Fine sandy loam, loam, sandy clay loam	SC, SC-SM, CL, CL-ML	A-4, A-6	0	0	98-100	95-100	75-95	35-60	20-35	5-15
	40-60	Loamy fine sand, sandy loam, fine sand, sand	SC, SC-SM, SM, SP-SM	A-2-4, A-4	0	0	95-100	90-100	65-95	5-45	15-20	NP-8

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
152A:												
Drummer---------	0-14	Silty clay loam	CL, ML	A-6, A-7-6	0	0	100	95-100	95-100	85-100	30-50	15-30
	14-42	Silty clay loam, silt loam	ML, CL	A-6, A-7-6	0	0	100	95-100	95-100	85-100	30-50	15-30
	42-50	Loam, clay loam, sandy loam, silt loam	CL, ML, SM, SC	A-6, A-7-6	0	0-5	95-100	90-100	75-95	40-85	30-50	15-30
	50-60	Stratified loamy sand to silty clay loam	SM, SC, ML, CL	A-2-6, A-4, A-6	0	0-5	95-100	80-98	75-95	15-85	20-35	7-20
184A:												
Roby------------	0-6	Fine sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	100	100	75-100	20-50	15-25	2-10
	6-15	Loamy fine sand, fine sandy loam	SC-SM, SM, ML, CL-ML	A-2-4, A-4	0	0	98-100	95-100	70-95	20-55	15-20	NP-8
	15-32	Fine sandy loam, loam, sandy loam	SC, SC-SM, CL, CL-ML	A-4, A-6	0	0	98-100	95-100	75-95	35-60	20-35	5-15
	32-60	Stratified fine sand to fine sandy loam	SC, SC-SM, SM, SP-SM	A-2-4, A-4	0	0	95-100	90-100	65-95	5-45	15-20	NP-8
189A:												
Martinton-------	0-12	Silt loam	CL	A-6, A-7-6	0	0	95-100	95-100	90-100	75-95	30-45	10-20
	12-39	Silty clay loam, silty clay	CL	A-6, A-7-6	0	0	95-100	95-100	90-100	70-95	35-50	20-30
	39-60	Stratified sandy loam to silty clay	CL, SC	A-6, A-7-6	0	0	90-100	80-100	75-100	35-90	25-45	10-25
189B:												
Martinton-------	0-10	Silt loam	CL	A-6, A-7-6	0	0	95-100	95-100	90-100	75-95	30-45	10-20
	10-34	Silty clay loam, silty clay	CL	A-6, A-7-6	0	0	95-100	95-100	90-100	70-95	35-50	20-30
	34-60	Stratified sandy loam to silty clay	CL, SC	A-6, A-7-6	0	0	90-100	80-100	75-100	35-90	25-45	10-25

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
201A:												
Gilford---------	0-22	Fine sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	95-100	95-100	65-85	30-50	15-25	2-10
	22-41	Sandy loam, fine sandy loam	SC, SC-SM, SM	A-4, A-2-4	0	0	95-100	95-100	60-75	20-45	15-30	NP-8
	41-60	Sand, fine sand, loamy sand	SM, SP-SM, SP	A-2-4, A-3	0	0	95-100	85-100	55-75	3-20	0-14	NP
223B:												
Varna-----------	0-12	Silt loam	CL, ML	A-4, A-6	0	0-1	98-100	95-100	90-100	80-95	25-40	8-20
	12-30	Silty clay, silty clay loam, clay	CL, CH, MH	A-6, A-7-6	0-1	0-3	95-100	90-100	85-100	80-95	35-55	20-35
	30-48	Silty clay, silty clay loam	CL, ML	A-6, A-7-6	0-1	0-5	95-100	85-100	80-100	75-95	30-50	15-30
	48-60	Silty clay loam, clay loam	CL, ML	A-6, A-7-6	0-1	0-5	90-100	85-100	80-100	70-95	30-45	13-25
223B2:												
Varna-----------	0-7	Silt loam	CL, ML	A-4, A-6	0	0-1	98-100	95-100	90-100	80-95	25-40	8-20
	7-26	Silty clay, silty clay loam, clay	CL, CH, MH	A-6, A-7-6	0-1	0-3	95-100	90-100	85-100	80-95	35-55	20-35
	26-38	Silty clay, silty clay loam	CL, ML	A-6, A-7-6	0-1	0-5	95-100	85-100	80-100	75-95	30-50	15-30
	38-60	Silty clay loam, clay loam	CL, ML	A-6, A-7-6	0-1	0-5	90-100	85-100	80-100	70-95	30-45	13-25
223C2:												
Varna-----------	0-9	Silt loam	CL, ML	A-4, A-6	0	0-1	98-100	95-100	90-100	80-95	25-40	8-20
	9-29	Silty clay, silty clay loam, clay	CL, CH, MH	A-6, A-7-6	0-1	0-3	95-100	90-100	85-100	80-95	35-55	20-35
	29-50	Silty clay, silty clay loam	CL, ML	A-6, A-7-6	0-1	0-5	95-100	85-100	80-100	75-95	30-50	15-30
	50-60	Silty clay loam, clay loam	CL, ML	A-6, A-7-6	0-1	0-5	90-100	85-100	80-100	70-95	30-45	13-25

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
223C3:												
Varna-----------	0-6	Silty clay loam	CL	A-6, A-7-6	0	0-1	98-100	95-100	90-100	80-95	30-45	12-25
	6-16	Silty clay, silty clay loam, clay	CL, CH, MH	A-6, A-7-6	0-1	0-3	95-100	90-100	85-100	80-95	35-55	20-35
	16-19	Silty clay, silty clay loam	CL, ML	A-6, A-7-6	0-1	0-5	95-100	85-100	80-100	75-95	30-50	15-30
	19-60	Silty clay loam, clay loam	CL, ML	A-6, A-7-6	0-1	0-5	90-100	85-100	80-100	70-95	30-45	13-25
228A:												
Nappanee--------	0-5	Silt loam	CL	A-4, A-6	0	0-1	95-100	95-100	90-100	80-95	25-40	8-20
	5-8	Silt loam	CL, CL-ML	A-4, A-6	0	0-1	95-100	95-100	90-100	80-95	20-35	5-18
	8-26	Silty clay, clay	CL, CH	A-7-5, A-7-6	0	0-2	95-100	90-100	85-100	80-95	40-70	20-40
	26-48	Silty clay, clay	CL, CH	A-6, A-7-5, A-7-6	0	0-2	95-100	90-100	85-100	75-95	30-50	15-30
	48-75	Silty clay loam, silty clay, clay	CL, CH	A-6, A-7-5, A-7-6	0-1	0-3	95-100	85-100	80-100	70-95	30-50	10-30
228B:												
Nappanee--------	0-4	Silt loam	CL	A-4, A-6	0	0-1	95-100	95-100	90-100	80-95	25-40	8-20
	4-9	Silt loam	CL, CL-ML	A-4, A-6	0	0-1	95-100	95-100	90-100	80-95	20-35	5-18
	9-23	Silty clay, clay	CL, CH	A-7-5, A-7-6	0	0-2	95-100	90-100	85-100	80-95	40-70	20-40
	23-46	Silty clay, clay	CL, CH	A-6, A-7-6	0	0-2	95-100	90-100	85-100	75-95	30-50	15-30
	46-60	Silty clay loam, silty clay, clay	CL, CH	A-6, A-7-6	0-1	0-3	95-100	85-100	80-100	70-95	30-50	10-30
232A:												
Ashkum----------	0-12	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-100	45-52	22-28
	12-29	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	100	97-100	95-100	85-100	45-57	22-32
	29-54	Silty clay loam	CL	A-6	0	0-1	95-100	85-98	80-95	70-95	33-45	12-22
	54-60	Silty clay loam	CL	A-6	0	0-3	95-100	85-98	80-95	70-95	33-39	12-17

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
235A:												
Bryce-----------	0-13	Silty clay	CH, CL, MH	A-7-6, A-7-5	0	0	100	100	95-100	85-98	45-60	20-30
	13-45	Silty clay, clay	CH, MH	A-7-6	0-1	0-2	95-100	95-100	95-100	80-95	50-60	25-35
	45-58	Silty clay, clay	CL, CH, MH	A-7-6	0-1	0-3	95-100	90-100	90-100	75-95	45-60	20-35
	58-66	Silty clay, silty clay loam, clay	CH, CL, MH	A-7-6, A-7-5	0-1	0-5	95-100	85-100	80-100	75-95	40-60	20-30
241D3:												
Chatsworth------	0-2	Silty clay	MH, CH	A-7-6, A-7-5	0	0	100	100	95-100	90-100	50-65	25-35
	2-22	Silty clay, clay, silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	95-100	90-100	45-75	20-45
	22-60	Silty clay, clay, silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	90-100	80-95	45-65	20-35
241E3:												
Chatsworth------	0-7	Silty clay	CH, MH	A-7-6, A-7-5	0	0	100	100	95-100	90-100	50-65	25-35
	7-21	Silty clay, clay, silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	95-100	90-100	45-75	20-45
	21-60	Silty clay, clay, silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	90-100	80-95	45-65	20-35
241F:												
Chatsworth------	0-4	Silty clay loam	CH, MH, CL	A-7-6, A-6	0	0	100	100	95-100	90-100	30-55	10-30
	4-24	Silty clay, clay, silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	95-100	90-100	45-75	20-45
	24-60	Silty clay, clay, silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	90-100	80-95	45-65	20-35
241G:												
Chatsworth------	0-5	Silty clay loam	CL, MH, CH	A-7-6, A-6	0	0	100	100	95-100	90-100	30-55	10-30
	5-20	Silty clay, clay, silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	95-100	90-100	45-75	20-45
	20-60	Silty clay, clay, silty clay loam	MH, CH, CL	A-7-6, A-7-5	0	0	100	95-100	90-100	80-95	45-65	20-35

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
290B:												
Warsaw----------	0-11	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-98	55-75	20-30	4-15
	11-29	Sandy clay loam, loam, clay loam	CL, ML, SC, SM	A-2-6, A-4, A-6	0	0-3	90-100	85-100	60-90	30-80	25-40	8-20
	29-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-3	1-5	30-85	15-80	7-20	2-15	0-15	NP
290C2:												
Warsaw----------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	85-98	70-95	20-30	4-15
	8-16	Sandy clay loam, loam, clay loam, silty clay loam	CL, ML, SC, SM	A-4, A-6	0	0-3	90-100	85-100	70-95	40-90	20-40	8-20
	16-27	Gravelly loam, gravelly sandy clay loam, gravelly clay loam, gravelly sandy loam	CL, GC, SC, SC-SM	A-2-4, A-2-6, A-4, A-6	0-1	0-5	70-90	60-75	55-70	30-60	20-35	5-20
	27-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-3	1-5	30-80	15-75	7-20	2-10	0-15	NP
293A:												
Andres----------	0-11	Silt loam	CL, ML	A-4, A-6	0	0	95-100	90-100	80-95	65-90	29-33	7-13
	11-36	Clay loam, sandy clay loam, loam, silty clay loam	CL, ML	A-6	0	0-1	95-100	85-100	75-95	50-85	31-39	11-18
	36-50	Silty clay loam	CL, ML	A-6	0	0-1	95-100	85-100	80-95	70-95	33-39	12-17
	50-60	Silty clay loam, silt loam	CL, ML	A-6	0	0-3	95-100	85-100	80-95	70-95	30-39	10-17

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
294A:												
Symerton--------	0-12	Silt loam	ML, CL	A-6, A-4	0	0	95-100	90-100	80-100	65-90	29-33	7-13
	12-18	Silty clay loam	ML, CL	A-6	0	0	95-100	90-100	80-100	70-95	31-37	10-15
	18-41	Gravelly clay loam, loam, clay loam, gravelly loam	CL, ML, SC, SM	A-6, A-4	0	0-3	85-100	70-95	60-85	40-60	29-39	9-20
	41-50	Silt loam, silty clay loam	ML, CL	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	28-39	7-18
	50-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	24-37	7-18
294B:												
Symerton--------	0-15	Silt loam	ML, CL	A-6, A-4	0	0	95-100	90-100	80-100	65-90	29-33	7-13
	15-19	Silty clay loam	CL, ML	A-6	0	0	95-100	90-100	80-100	70-95	31-37	10-15
	19-35	Gravelly clay loam, loam, clay loam, gravelly loam	CL, ML, SC, SM	A-6, A-4	0	0-3	85-100	70-95	60-85	40-60	29-39	9-20
	35-39	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	28-39	7-18
	39-60	Silt loam, silty clay loam	ML, CL	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	24-37	7-18
294C2:												
Symerton--------	0-8	Silt loam	CL, ML	A-6, A-4	0	0	95-100	90-100	80-100	65-90	29-33	7-13
	8-31	Gravelly clay loam, loam, clay loam, gravelly loam	CL, ML, SC, SM	A-6, A-4	0	0-3	85-100	70-95	60-85	40-60	29-39	9-20
	31-40	Silt loam, silty clay loam	ML, CL	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	28-39	7-18
	40-60	Silt loam, silty clay loam	ML, CL	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	24-37	7-18

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
298A:												
Beecher---------	0-9	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	85-100	29-37	7-15
	9-21	Silty clay loam, silty clay	CH, CL	A-6, A-7-5, A-7-6	0	0	100	95-100	90-100	85-100	35-55	15-30
	21-37	Silty clay loam	CL	A-6, A-7-6	0	0-1	95-100	85-98	80-95	70-95	33-42	12-20
	37-60	Silty clay loam	CL	A-6	0	0-3	95-100	85-98	80-95	70-95	31-37	10-17
298B:												
Beecher---------	0-7	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	85-100	29-37	7-15
	7-24	Silty clay loam, silty clay	CH, MH, CL	A-7-6, A-6	0	0	100	95-100	90-100	85-100	35-55	15-30
	24-36	Silty clay loam	ML, CL	A-6, A-7-6	0	0-1	95-100	85-98	80-95	70-95	33-42	12-20
	36-60	Silty clay loam	CL, ML	A-6	0	0-3	95-100	85-98	80-95	70-95	31-37	10-17
315A:												
Channahon-------	0-8	Silt loam	CL, ML	A-4, A-6	0-1	0-5	90-100	80-100	75-95	70-90	20-40	7-20
	8-16	Loam, silt loam, clay loam, silty clay loam	CL	A-6, A-7-6	0-2	0-10	90-100	80-100	75-95	50-85	30-45	15-25
	16-60	Bedrock	---	---	---	---	---	---	---	---	---	---
315B:												
Channahon-------	0-11	Silt loam	ML, CL	A-4, A-6	0-1	0-5	90-100	80-100	75-95	70-90	20-40	7-20
	11-18	Loam, silt loam, clay loam, silty clay loam	CL	A-6, A-7-6	0-2	0-10	90-100	80-100	75-95	50-85	30-45	15-25
	18-60	Bedrock	---	---	---	---	---	---	---	---	---	---
315C2:												
Channahon-------	0-6	Silt loam	CL, ML	A-4, A-6	0-1	0-5	90-100	80-100	75-95	70-90	20-40	7-20
	6-13	Loam, silt loam, clay loam, silty clay loam	CL	A-6, A-7-6	0-2	0-10	90-100	80-100	75-95	50-85	30-45	15-25
	13-60	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
318B:												
Lorenzo---------	0-9	Loam	CL, ML	A-6	0	0-5	95-100	90-100	75-90	60-75	25-40	10-20
	9-18	Loam, clay loam, sandy clay loam, gravelly loam	CL, ML, SC, SM	A-2-6, A-6, A-7-6	0	2-10	85-100	50-95	35-85	20-70	30-45	10-25
	18-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0	5-20	25-80	10-70	5-40	1-15	0-15	NP-5
329A:												
Will------------	0-16	Silty clay loam	ML, CL	A-4, A-6	0	0	95-100	90-100	85-98	75-95	25-40	8-20
	16-24	Loam, clay loam, silty clay loam	ML, CL	A-6, A-7-6	0-1	0-5	90-100	80-100	60-98	55-90	25-50	15-30
	24-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-2	1-10	40-85	15-70	10-40	1-15	0-14	NP
330A:												
Peotone---------	0-13	Silty clay loam	CL, CH, MH	A-7-6, A-7-5	0	0	100	95-100	95-100	90-100	40-65	15-35
	13-50	Silty clay loam, silty clay	CL, CH, MH	A-7-6, A-7-5	0	0-3	98-100	95-100	90-100	85-100	40-70	15-40
	50-60	Silty clay loam, silt loam, silty clay	CL, CH, MH	A-6, A-7-6, A-7-5	0	0-5	95-100	95-100	90-100	75-100	30-60	15-30

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
343A:												
Kane------------	0-11	Silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	90-100	75-95	25-35	5-15
	11-26	Silty clay loam, clay loam, loam	CL, ML	A-6, A-7-6	0	0	95-100	95-100	90-100	75-95	35-45	10-20
	26-34	Clay loam, sandy loam, loam	CL, SC	A-4, A-6	0-1	0-5	90-100	80-95	60-90	40-70	20-35	8-15
	34-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, SP, SP-SM, GP-GM	A-1-a, A-1-b	0-1	0-10	30-85	15-75	10-50	2-12	0-15	NP
354B:												
Hononegah-------	0-18	Loamy sand	SM	A-2-4	0	0-2	90-100	85-100	60-80	15-25	3-20	NP-5
	18-32	Coarse sand, loamy coarse sand, sandy loam	SM, SP-SM	A-1-b, A-2-4	0-1	0-5	85-100	80-95	40-60	10-30	7-23	NP-6
	32-60	Coarse sand, loamy coarse sand, extremely gravelly coarse sand	SM, SP-SM, SP	A-1-a, A-1-b	0-1	0-10	50-98	35-95	10-35	0-20	0-14	NP
354D:												
Hononegah-------	0-14	Loamy sand	SM	A-2-4	0	0-2	90-100	85-100	60-80	15-25	3-20	NP-5
	14-38	Coarse sand, loamy coarse sand, sandy loam	SM, SP-SM	A-1-b, A-2-4	0-1	0-5	85-100	80-95	40-60	10-30	7-23	NP-6
	38-60	Coarse sand, loamy coarse sand, extremely gravelly coarse sand	SM, SP-SM, SP	A-1-a, A-1-b	0-1	0-10	50-98	35-95	10-35	0-20	0-14	NP

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
356A:												
Elpaso----------	0-21	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	95-100	90-100	35-50	15-30
	21-44	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	90-100	30-50	15-30
	44-69	Clay loam, silt loam, silty clay loam	ML, CL	A-6, A-7-6	0	0	100	85-100	80-100	70-100	25-45	10-25
	69-80	Clay loam, silt loam, silty clay loam	CL	A-6	0	0-5	95-100	85-100	75-100	70-98	20-35	10-20
494B:												
Kankakee--------	0-11	Fine sandy loam	SC, SC-SM, SM	A-4, A-6	0	0-10	95-100	95-100	80-90	35-50	20-35	5-15
	11-14	Sandy loam, clay loam, sandy clay loam, loam	SC, SM, CL, ML	A-6, A-7-6	0-1	0-10	95-100	85-98	70-90	30-60	30-50	10-25
	14-21	Very cobbly loam, cobbly sandy loam, cobbly loam	SC, SC-SM, SM, CL	A-2-4, A-2-6, A-6, A-4	0-2	20-70	75-95	45-80	30-65	20-55	20-40	3-15
	21-60	Very cobbly loam, extremely cobbly sandy loam, cobbly loam	SM, SC-SM, SC, SP-SM	A-1-b, A-2-4, A-4	0-2	25-80	70-90	45-70	25-60	10-40	15-35	NP-10
503A:												
Rockton---------	0-17	Silt loam	CL	A-6	0	0	100	95-100	85-95	65-90	29-39	12-17
	17-28	Clay loam, loam, sandy clay loam	CL	A-7-6, A-6	0	0	95-100	90-100	75-97	55-85	37-46	19-25
	28-34	Clay loam, clay, silty clay	CL, CH	A-7-6	0	0-6	80-100	70-95	65-90	55-85	45-69	25-44
	34-60	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
503B:												
Rockton---------	0-11	Silt loam	CL	A-6	0	0	100	95-100	85-95	65-90	29-39	12-17
	11-27	Clay loam, loam, sandy clay loam	CL	A-7-6, A-6	0	0	95-100	90-100	75-97	55-85	37-46	19-25
	27-31	Clay loam, clay, silty clay	CH, CL	A-7-6	0	0-6	80-100	70-95	65-90	55-85	45-69	25-44
	31-60	Bedrock	---	---	---	---	---	---	---	---	---	---
513A:												
Granby----------	0-8	Fine sandy loam	SM, SC-SM	A-4, A-2-4	0	0	100	100	60-70	25-45	5-20	NP-5
	8-17	Sand, loamy sand, loamy fine sand	SM, SP-SM	A-2-4, A-3	0	0	100	95-100	50-75	5-25	0-15	NP-3
	17-30	Sand, fine sand, loamy fine sand, loamy sand	SP-SM, SM	A-2-4, A-3	0	0	100	95-100	50-75	5-25	0-15	NP-3
	30-80	Sand, fine sand, loamy sand, loamy fine sand	SP-SM, SP	A-2-4, A-3	0	0	100	90-100	50-70	0-20	0-14	NP
516A:												
Faxon-----------	0-5	Silt loam	CL	A-6	0	0	100	95-100	85-95	65-90	29-39	12-17
	5-13	Loam, clay loam	CL	A-7-6, A-6	0	0	95-100	90-100	75-97	55-85	35-42	17-22
	13-25	Clay loam, loam	CL	A-7-6, A-6	0	0-5	95-100	80-100	70-97	55-85	37-46	19-25
	25-60	Bedrock	---	---	---	---	---	---	---	---	---	---
530B:												
Ozaukee---------	0-4	Silt loam	CL, ML	A-4, A-6	0	0-1	98-100	98-100	90-100	85-95	25-35	7-15
	4-10	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0-2	95-100	95-100	90-100	85-95	20-35	5-15
	10-21	Silty clay loam, clay, silty clay	MH, CH, CL	A-7-6	0-1	0-3	95-100	90-98	85-95	85-95	45-65	25-40
	21-39	Silty clay loam, silty clay	CH, CL	A-6, A-7-6	0-1	0-5	90-98	85-98	80-95	75-95	35-55	20-35
	39-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
530C2:												
Ozaukee---------	0-6	Silt loam	ML, CL	A-4, A-6	0	0-1	98-100	98-100	90-100	85-95	25-35	7-15
	6-21	Silty clay loam, clay, silty clay	MH, CH, CL	A-7-6	0-1	0-3	95-100	90-98	85-95	85-95	45-65	25-40
	21-28	Silty clay loam, silty clay	CH, CL	A-6, A-7-6	0-1	0-5	90-98	85-98	80-95	75-95	35-55	20-35
	28-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25
530C3:												
Ozaukee---------	0-9	Silty clay loam	CL, ML	A-6, A-7-6	0	0-1	90-98	85-98	85-95	80-95	35-50	15-25
	9-21	Silty clay loam, clay, silty clay	CL, CH, MH	A-7-6	0-1	0-3	95-100	90-98	85-95	85-95	45-65	25-40
	21-27	Silty clay loam, silty clay	CH, CL	A-6, A-7-6	0-1	0-5	90-98	85-98	80-95	75-95	35-55	20-35
	27-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25
530D2:												
Ozaukee---------	0-6	Silt loam	ML, CL	A-4, A-6	0	0-1	98-100	98-100	90-100	85-95	25-35	7-15
	6-20	Silty clay loam, clay, silty clay	MH, CH, CL	A-7-6	0-1	0-3	95-100	90-98	85-95	85-95	45-65	25-40
	20-28	Silty clay loam, silty clay	CL, CH	A-6, A-7-6	0-1	0-5	90-98	85-98	80-95	75-95	35-55	20-35
	28-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25
530D3:												
Ozaukee---------	0-9	Silty clay loam	ML, CL	A-6, A-7-6	0	0-1	90-98	85-98	85-95	80-95	35-50	15-25
	9-21	Silty clay loam, clay, silty clay	CH, CL, MH	A-7-6	0-1	0-3	95-100	90-98	85-95	85-95	45-65	25-40
	21-25	Silty clay loam, silty clay	CH, CL	A-6, A-7-6	0-1	0-5	90-98	85-98	80-95	75-95	35-55	20-35
	25-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
530E2:												
Ozaukee---------	0-6	Silt loam	ML, CL	A-4, A-6	0	0-1	98-100	98-100	90-100	85-95	25-35	7-15
	6-27	Silty clay loam, clay, silty clay	CL, CH, MH	A-7-6	0-1	0-3	95-100	90-98	85-95	85-95	45-65	25-40
	27-31	Silty clay loam, silty clay	CL, CH	A-6, A-7-6	0-1	0-5	90-98	85-98	80-95	75-95	35-55	20-35
	31-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25
530F:												
Ozaukee---------	0-5	Silt loam	ML, CL	A-4, A-6	0	0-1	98-100	98-100	90-100	85-95	25-35	7-15
	5-29	Silty clay loam, clay, silty clay	MH, CH, CL	A-7-6	0-1	0-3	95-100	90-98	85-95	85-95	45-65	25-40
	29-36	Silty clay loam, silty clay	CL, CH	A-6, A-7-6	0-1	0-5	90-98	85-98	80-95	75-95	35-55	20-35
	36-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-5	90-98	80-95	75-95	70-90	35-45	15-25
536.												
Dumps												
541B:												
Graymont--------	0-12	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-20
	12-33	Silty clay loam, silt loam	ML, CL	A-6, A-7-6	0	0	100	100	95-100	90-100	30-50	10-25
	33-38	Silty clay loam, silt loam	MH, ML, CH, CL	A-6, A-7-6	0	0-5	90-100	85-99	80-95	80-90	30-55	10-30
	38-60	Silty clay loam, silt loam	ML, CL	A-4, A-6, A-7-6	0	0-5	90-100	80-98	80-95	80-90	25-50	8-25

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
541C2:												
Graymont--------	0-9	Silt loam	ML, CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-20
	9-30	Silty clay loam, silt loam	ML, CL	A-6, A-7-6	0	0	100	100	95-100	90-100	30-50	10-25
	30-38	Silty clay loam, silt loam	CH, ML, MH, CL	A-6, A-7-6	0	0-5	90-100	85-99	80-95	80-90	30-55	10-30
	38-60	Silty clay loam, silt loam	CL, ML	A-4, A-6, A-7-6	0	0-5	90-100	80-98	80-95	80-90	25-50	8-25
553A:												
Bryce-----------	0-17	Silty clay	CL, CH, MH	A-7-6, A-7-5	0	0	100	100	95-100	85-98	45-60	20-30
	17-36	Silty clay, clay	CH, MH	A-7-6, A-7-5	0	0-1	98-100	95-100	95-100	80-95	50-60	25-35
	36-43	Silty clay, clay	CL, CH, MH	A-7-6, A-7-5	0	0-1	95-100	90-100	90-100	75-95	45-60	20-35
	43-60	Bedrock	---	---	---	---	---	---	---	---	---	---
Calamine--------	0-12	Silty clay	CL, CH, MH	A-7-6, A-7-5	0	0	100	100	95-100	85-98	45-60	20-30
	12-29	Silty clay, clay	MH, CH	A-7-6, A-7-5	0	0-1	98-100	95-100	95-100	80-95	50-60	25-35
	29-33	Silty clay, clay	MH, CL, CH	A-7-6, A-7-5	0	0-1	95-100	90-100	90-100	75-95	45-60	20-35
	33-60	Bedrock	---	---	---	---	---	---	---	---	---	---
555A:												
Shadeland-------	0-9	Silt loam	CL, ML	A-4, A-6	0	0	95-100	95-100	85-98	75-95	28-37	8-16
	9-13	Silt loam	CL, ML	A-4, A-6	0	0	95-100	95-100	85-98	75-95	25-35	7-15
	13-23	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0-2	95-100	85-100	75-100	70-95	30-45	11-21
	23-36	Clay loam, loam	CL, ML, SC	A-6, A-7-6	0-2	0-5	90-100	85-100	70-100	45-80	28-43	10-20
	36-60	Bedrock	---	---	---	---	---	---	---	---	---	---
556B:												
High Gap--------	0-9	Silt loam	CL, ML	A-4, A-6	0	0	95-100	95-100	85-98	75-95	28-37	8-16
	9-28	Clay loam, silt loam, loam	CL, ML	A-6, A-7-6	0	0-2	95-100	85-100	75-100	55-85	30-45	11-21
	28-36	Loam, sandy loam, clay loam, fine sandy loam	CL, ML, SC	A-6, A-4, A-2-6	0-2	0-5	90-100	85-100	70-100	30-75	26-39	8-18
	36-60	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
570B:												
Martinsville----	0-7	Loam	CL, CL-ML, ML	A-4	0	0	100	90-100	75-95	50-70	15-25	3-8
	7-13	Sandy loam, loam	ML, CL-ML, CL	A-4	0	0	100	90-100	75-95	45-70	15-25	3-8
	13-48	Clay loam, silty clay loam, sandy clay loam, loam	CL, ML	A-4, A-6	0	0	95-100	85-100	70-95	45-90	25-40	7-15
	48-63	Sandy loam, sandy clay loam, silt loam	SC-SM, SC, CL-ML, CL	A-4, A-6	0	0	95-100	85-100	55-95	40-80	20-30	5-15
	63-80	Stratified sand to silt loam	SM, SC-SM, ML, CL-ML	A-1-b, A-2-4, A-4	0	0	95-100	85-100	45-95	10-80	15-25	NP-8
570C2:												
Martinsville----	0-6	Loam	CL, CL-ML, ML	A-4	0	0	100	90-100	75-95	50-70	15-25	3-8
	6-9	Sandy loam, loam	ML, CL-ML, CL	A-4	0	0	100	90-100	75-95	45-70	15-25	3-8
	9-35	Clay loam, silty clay loam, sandy clay loam, loam	CL, ML	A-4, A-6	0	0	95-100	85-100	70-95	45-90	25-40	7-15
	35-54	Sandy loam, sandy clay loam, silt loam	SC-SM, SC, CL-ML, CL	A-4, A-6	0	0	95-100	85-100	55-95	40-80	20-30	5-15
	54-80	Stratified sand to silt loam	SM, SC-SM, ML, CL-ML	A-1-b, A-2-4, A-4	0	0	95-100	85-100	45-95	10-80	15-25	NP-8
570D2:												
Martinsville----	0-5	Loam	CL, CL-ML, ML	A-4	0	0	100	90-100	75-95	50-70	15-25	3-8
	5-13	Sandy loam, loam	ML, CL-ML, CL	A-4	0	0	100	90-100	75-95	45-70	15-25	3-8
	13-35	Clay loam, silty clay loam, sandy clay loam, loam	CL, ML	A-4, A-6	0	0	95-100	85-100	70-95	45-90	25-40	7-15
	35-55	Sandy loam, sandy clay loam, silt loam	SC-SM, SC, CL-ML, CL	A-4, A-6	0	0	95-100	85-100	55-95	40-80	20-30	5-15
	55-80	Stratified sand to silt loam	SM, SC-SM, ML, CL-ML	A-1-b, A-2-4, A-4	0	0	95-100	85-100	45-95	10-80	15-25	NP-8

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
594A:												
Reddick---------	0-13	Clay loam	CL, ML	A-6, A-7-6	0	0	95-100	85-98	80-90	60-85	30-45	10-25
	13-32	Clay loam, silty clay loam, loam	CL, ML	A-6, A-7-6	0	0-5	95-100	85-98	80-90	55-85	30-45	10-25
	32-47	Silty clay, silty clay loam	CH, CL, ML	A-6, A-7-6	0	0-5	95-100	85-100	85-95	75-95	35-55	15-35
	47-60	Silty clay loam, silty clay	CL, ML	A-6, A-7-6	0	0-5	95-100	85-100	85-95	75-95	30-50	15-30
614A:												
Chenoa----------	0-12	Silty clay loam	ML, CL	A-7-6	0	0	100	100	97-100	93-100	40-46	15-19
	12-32	Silty clay loam, silty clay	CL, MH, CH	A-7-6	0	0	100	100	97-100	93-100	45-52	22-28
	32-36	Silty clay loam, silt loam	CL, ML	A-7-6, A-6	0	0-1	95-100	85-98	80-95	70-95	33-43	12-20
	36-60	Silty clay loam, silt loam	CL, ML	A-6	0	0-3	95-100	85-98	80-95	70-95	33-39	12-17
672A:												
Cresent---------	0-15	Loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	75-100	45-80	20-35	5-15
	15-46	Loam, clay loam, sandy clay loam	CL, SC	A-4, A-6	0	0	100	95-100	60-100	35-80	25-40	8-20
	46-60	Sand, loamy sand	SC, SC-SM, SM, SP-SM	A-2-4, A-3	0	0	100	90-100	50-75	5-30	5-22	NP-8
672B:												
Cresent---------	0-7	Loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	75-100	45-80	20-35	5-15
	7-11	Silt loam, loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	70-100	45-80	20-35	5-15
	11-41	Loam, clay loam, sandy clay loam	CL, SC	A-4, A-6	0	0	100	95-100	60-100	35-80	25-40	8-20
	41-60	Loamy sand, sand	SC, SC-SM, SM, SP-SM	A-2-4, A-3	0	0	100	90-100	50-75	5-30	5-22	NP-8

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
688B:												
Braidwood-------	0-9	Loam	CL, ML	A-6, A-4	0	0-5	95-100	90-100	70-95	55-75	25-35	8-15
	9-22	Silt loam, loam	ML, CL	A-6, A-4	0-1	0-5	95-100	90-100	70-90	50-85	25-35	8-15
	22-42	Silt loam, loam, sandy loam	CL, CL-ML, ML, SC-SM, SM	A-2-4, A-4	0-1	0-10	90-100	85-100	60-90	30-75	0-20	NP-10
	42-64	Stratified sand to silt loam	SP-SM, SM, SC-SM, ML	A-2-4, A-4	0-2	0-10	90-100	85-100	55-85	10-75	0-20	NP-5
688D:												
Braidwood-------	0-8	Loam	CL, ML	A-6, A-4	0	0-5	95-100	90-100	70-95	55-75	25-35	8-15
	8-16	Silt loam, loam	CL, ML	A-6, A-4	0-1	0-5	95-100	90-100	70-90	50-85	25-35	8-15
	16-42	Silt loam, loam, sandy loam	CL, CL-ML, ML, SC-SM, SM	A-2-4, A-4	0-1	0-10	90-100	85-100	60-90	30-75	0-20	NP-10
	42-65	Stratified sand to silt loam	ML, SM, SC-SM, SP-SM	A-2-4, A-4	0-2	0-10	90-100	85-100	55-85	10-75	0-20	NP-5
688G:												
Braidwood-------	0-6	Loam	CL, ML	A-6, A-4	0	0-5	95-100	90-100	70-95	55-75	25-35	8-15
	6-15	Silt loam, loam	ML, CL	A-6, A-4	0-1	0-5	95-100	90-100	70-90	50-85	25-35	8-15
	15-37	Silt loam, loam, sandy loam	CL, CL-ML, ML, SC-SM, SM	A-2-4, A-4	0-1	0-10	90-100	85-100	60-90	30-75	0-20	NP-10
	37-65	Stratified sand to silt loam	SP-SM, SC-SM, ML, SM	A-2-4, A-4	0-2	0-10	90-100	85-100	55-85	10-75	0-20	NP-5
740A:												
Darroch---------	0-15	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	80-100	70-90	15-30	3-15
	15-21	Silt loam, clay loam, loam, silty clay loam	CL, ML	A-4, A-6	0	0	95-100	90-100	75-100	60-90	20-40	7-20
	21-29	Clay loam, sandy clay loam, loam, fine sandy loam	CL-ML, SC, SC-SM, CL, ML	A-2-6, A-4, A-6, A-2-4	0	0	95-100	90-100	70-100	30-80	20-40	5-20
	29-60	Stratified sandy loam to silt loam	CL, CL-ML, ML, SC-SM, SM	A-4	0	0	90-100	80-100	70-90	35-85	15-25	NP-8

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
741B:												
Oakville--------	0-7	Fine sand	SP-SM, SP, SM	A-2-4, A-3	0	0	100	95-100	60-90	0-20	0-14	NP
	7-40	Fine sand, loamy fine sand	SM, SP, SP-SM	A-2-4, A-3	0	0	100	95-100	65-95	0-30	0-14	NP
	40-60	Loamy sand, fine sand	SP-SM, SM, SP	A-2-4, A-3	0	0	100	95-100	60-90	0-30	0-14	NP
741D:												
Oakville--------	0-6	Fine sand	SP-SM, SM, SP	A-2-4, A-3	0	0	100	95-100	60-90	0-20	0-14	NP
	6-30	Fine sand, loamy fine sand	SP, SP-SM, SM	A-2-4, A-3	0	0	100	95-100	65-95	0-30	0-14	NP
	30-60	Loamy sand, fine sand	SP-SM, SM, SP	A-2-4, A-3	0	0	100	95-100	60-90	0-30	0-14	NP
802B:												
Orthents, loamy	0-6	Loam	CL, ML	A-6, A-4	0-1	0-5	95-100	85-100	80-95	50-80	20-40	8-20
	6-60	Loam, silt loam, clay loam	CL, ML	A-6, A-4	0-1	0-5	95-100	80-100	75-95	50-80	20-40	8-20
802D:												
Orthents, loamy	0-6	Loam	ML, CL	A-4, A-6	0-1	0-5	95-100	85-100	80-95	50-80	20-40	8-20
	6-60	Loam, silt loam, clay loam	CL, ML	A-6, A-4	0-1	0-5	95-100	80-100	75-95	50-80	20-40	8-20
817A:												
Channahon-------	0-11	Fine sandy loam	SC-SM, SM	A-2-4, A-4	0	0-2	90-100	85-100	65-85	25-50	15-25	NP-7
	11-16	Fine sandy loam, loam, sandy loam, gravelly fine sandy loam	CL, CL-ML, SC, SC-SM	A-2-4, A-4	0	0-5	90-100	85-100	50-90	25-65	18-30	4-9
	16-19	Gravelly loamy fine sand, fine sandy loam, loamy fine sand, sand	SM, SP-SM	A-1-b, A-2-4, A-3, A-4	0	0-5	85-100	80-100	40-95	5-40	0-15	NP-2
	19-60	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
817A:												
Hesch-----------	0-12	Fine sandy loam	SC-SM, SM	A-2-4, A-4	0	0	95-100	90-100	65-85	25-50	15-25	NP-7
	12-27	Fine sandy loam, loam, sandy loam	CL, CL-ML, SC, SC-SM	A-2-4, A-4	0	0-2	90-100	85-100	50-90	25-65	18-30	4-9
	27-32	Loamy fine sand, fine sandy loam, sand	SM, SP-SM	A-1-b, A-2-4, A-3, A-4	0	0-5	90-100	80-100	40-95	5-40	0-15	NP-2
	32-60	Bedrock	---	---	---	---	---	---	---	---	---	---
817B:												
Channahon-------	0-7	Fine sandy loam	SC-SM, SM	A-2-4, A-4	0	0-2	90-100	85-100	65-85	25-50	15-25	NP-7
	7-15	Fine sandy loam, loam, sandy loam, gravelly fine sandy loam	CL, CL-ML, SC, SC-SM	A-2-4, A-4	0	0-5	90-100	85-100	50-90	25-65	18-30	4-9
	15-60	Bedrock	---	---	---	---	---	---	---	---	---	---
Hesch-----------	0-11	Fine sandy loam	SC-SM, SM	A-2-4, A-4	0	0	95-100	90-100	65-85	25-50	15-25	NP-7
	11-23	Fine sandy loam, loam, sandy loam	CL, CL-ML, SC, SC-SM	A-2-4, A-4	0	0-2	90-100	85-100	50-90	25-65	18-30	4-9
	23-60	Bedrock	---	---	---	---	---	---	---	---	---	---
830. Landfills												
863. Pits, clay												
865. Pits, gravel												

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
871D:												
Lenzburg--------	0-5	Silty clay loam	CL	A-6, A-7, A-7-6	0-1	2-10	80-100	75-100	65-95	55-85	35-50	15-25
	5-37	Silt loam, silty clay loam, clay loam	CL	A-6, A-7	0-2	2-10	80-95	75-90	70-90	55-85	25-45	10-25
	37-80	Silty clay loam, silt loam, gravelly loam, gravelly silty clay loam	CL	A-6, A-7	0-2	5-15	75-95	70-90	65-85	60-85	25-45	10-25
871G:												
Lenzburg--------	0-5	Silty clay loam	CL	A-6, A-7, A-7-6	0-1	2-10	80-100	75-100	65-95	55-85	35-50	15-25
	5-37	Silt loam, silty clay loam, clay loam	CL	A-6, A-7	0-2	2-10	80-95	75-90	70-90	55-85	25-45	10-25
	37-80	Silty clay loam, silt loam, gravelly loam, gravelly silty clay loam	CL	A-6, A-7	0-2	5-15	75-95	70-90	65-85	60-85	25-45	10-25
1107A:												
Sawmill---------	0-28	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	28-42	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
	42-60	Silty clay loam, clay loam, silt loam	CL, ML	A-7-6, A-6	0	0	100	90-100	85-100	80-95	37-46	16-22
3073A:												
Ross------------	0-23	Loam	CL, CL-ML, ML	A-4, A-6	0	0	90-100	90-100	80-100	65-95	20-35	5-15
	23-54	Loam, silt loam, silty clay loam	CL, CL-ML, ML	A-4, A-6, A-7-6	0	0	90-100	85-100	70-100	55-95	22-45	5-20
	54-60	Stratified sandy loam to silt loam	CL, CL-ML, ML, SC, SC-SM	A-4, A-6	0	0-3	90-100	80-100	55-100	40-80	5-35	NP-15

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
3107A:												
Sawmill	0-29	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	29-48	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
	48-60	Silty clay loam, clay loam, silt loam	CL, ML	A-7-6, A-6	0	0	100	90-100	85-100	80-95	37-46	16-22
3451A:												
Lawson	0-14	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	85-100	20-37	5-16
	14-33	Silt loam, silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	85-100	20-39	5-18
	33-80	Silt loam, silty clay loam, loam	CL, ML	A-4, A-6	0	0	100	100	90-100	60-100	23-40	7-20
3776A:												
Comfrey	0-7	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	55-90	25-35	5-15
	7-26	Clay loam, loam	ML, CL	A-6, A-7-6	0	0	100	100	85-100	55-85	35-50	10-30
	26-63	Clay loam, loam, sandy loam, silty clay loam	CL	A-6, A-7-6	0	0	90-100	80-100	70-95	45-85	30-45	10-25
4107A:												
Sawmill	0-5	Mucky silt loam	CL, CL-ML, ML, OL	A-4, A-6	0	0	100	98-100	97-100	85-100	20-36	5-16
	5-25	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	25-43	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
	43-60	Silty clay loam, clay loam, silt loam	CL, ML	A-7-6, A-6	0	0	100	90-100	85-100	80-95	37-46	16-22
4516A:												
Faxon	0-5	Mucky silt loam	CL, ML, OL	A-4, A-6	0	0	100	95-100	85-95	65-90	25-35	8-15
	5-13	Loam, clay loam, silt loam	CL	A-7-6, A-6	0	0	95-100	90-100	75-97	55-85	35-42	17-22
	13-25	Clay loam, loam	CL	A-7-6, A-6	0	0-5	95-100	80-100	70-97	55-85	37-46	19-25
	25-60	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
4904A:												
Muskego---------	0-5	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	5-36	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	36-80	Coprogenous earth	OL	A-5	0	0	95-100	95-100	85-100	80-96	40-50	2-8
Peotone---------	0-24	Silty clay loam	CL, CH, MH	A-7-6, A-7-5	0	0	100	95-100	95-100	90-100	40-65	15-35
	24-53	Silty clay loam, silty clay	CL, CH, MH	A-7-6, A-7-5	0	0-3	98-100	95-100	90-100	85-100	40-70	15-40
	53-60	Silty clay loam, silt loam, silty clay	CL, CH, MH	A-6, A-7-6, A-7-5	0	0-5	95-100	95-100	90-100	75-100	30-60	15-30
8073A:												
Ross------------	0-32	Loam	CL, CL-ML, ML	A-4, A-6	0	0	90-100	90-100	80-100	65-95	20-35	5-15
	32-50	Loam, silt loam, silty clay loam	CL, CL-ML, ML	A-4, A-6, A-7-6	0	0	90-100	85-100	70-100	55-95	22-45	5-20
	50-60	Stratified sandy loam to silt loam	CL, CL-ML, ML, SC, SC-SM	A-4, A-6	0	0-3	90-100	80-100	55-100	40-80	5-35	NP-15
8107A:												
Sawmill---------	0-26	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	26-53	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
	53-60	Stratified silty clay loam to clay loam	CL	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
8404A:												
Titus-----------	0-13	Silty clay loam	MH, CL, CH	A-7-5, A-7-6	0	0	100	100	95-100	90-100	49-60	20-30
	13-68	Silty clay loam, silty clay	CH, CL, MH	A-7-6	0	0	100	100	95-100	90-100	46-57	20-30
	68-80	Silty clay loam, silt loam, loam	CL	A-6	0	0	100	90-100	70-90	55-85	20-40	10-25

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
8451A:												
Lawson----------	0-13	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	85-100	20-37	5-16
	13-53	Silt loam, silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	85-100	20-39	5-18
	53-80	Silt loam, silty clay loam, loam	CL, ML	A-4, A-6	0	0	100	100	90-100	60-100	23-40	7-20
8776A:												
Comfrey---------	0-8	Loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	55-90	25-35	5-15
	8-29	Clay loam, loam	CL, ML	A-6, A-7-6	0	0	100	100	85-100	55-85	35-50	10-30
	29-65	Clay loam, loam, sandy loam, silty clay loam	CL	A-6, A-7-6	0	0	90-100	80-100	70-95	45-85	30-45	10-25

Table 22.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
23A:														
Blount--------------	0-7	5-20	53-77	18-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.32	.32	4	6	48
	7-13	5-20	53-80	15-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.37	.37			
	13-26	5-25	27-60	35-48	1.40-1.70	0.06-0.6	0.12-0.19	3.0-5.9	0.2-1.0	.37	.37			
	26-32	10-30	25-63	27-45	1.50-1.70	0.06-0.2	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
	32-60	10-30	30-63	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
23B:														
Blount--------------	0-6	5-20	53-77	18-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.32	.32	4	6	48
	6-10	5-20	53-80	15-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.37	.37			
	10-23	5-25	27-60	35-48	1.40-1.70	0.06-0.6	0.12-0.19	3.0-5.9	0.2-1.0	.37	.37			
	23-34	5-30	25-63	27-45	1.50-1.70	0.06-0.2	0.12-0.19	3.0-5.9	0.0-0.5	.37	.37			
	34-60	5-30	30-63	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
42A:														
Papineau------------	0-10	52-75	7-38	10-18	1.40-1.60	2-6	0.14-0.17	0.0-2.9	2.0-4.0	.15	.15	4	3	86
	10-13	40-70	5-45	15-27	1.40-1.55	0.6-2	0.17-0.21	0.0-2.9	2.0-4.0	.20	.20			
	13-32	40-70	3-40	17-32	1.45-1.65	0.6-2	0.14-0.19	3.0-5.9	0.5-1.5	.32	.32			
	32-41	1-25	5-50	45-75	1.50-1.70	0.06-0.2	0.05-0.12	6.0-8.9	0.1-0.5	.32	.32			
	41-60	1-25	5-50	45-75	1.60-1.80	0.02-0.06	0.03-0.10	3.0-5.0	0.0-0.5	.37	.37			
49A:														
Watseka-------------	0-10	72-90	0-26	2-13	1.35-1.55	6-20	0.10-0.12	0.0-2.9	1.0-2.5	.02	.02	5	2	134
	10-32	70-95	0-28	1-10	1.45-1.65	6-20	0.06-0.11	0.0-2.9	0.0-0.5	.10	.10			
	32-60	71-98	0-28	1-10	1.50-1.70	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.05			
69A:														
Milford-------------	0-9	5-20	40-60	35-40	1.30-1.50	0.6-2	0.20-0.23	6.0-8.9	4.0-6.0	.20	.20	5	4	86
	9-22	5-20	40-55	40-42	1.30-1.50	0.2-0.6	0.14-0.20	6.0-8.9	3.0-5.0	.17	.17			
	22-50	0-25	33-65	35-42	1.40-1.60	0.2-0.6	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	50-60	0-55	15-82	18-30	1.50-1.70	0.2-0.6	0.20-0.22	3.0-5.9	0.0-1.0	.37	.37			
88B:														
Sparta--------------	0-13	75-95	0-23	2-10	1.25-1.45	2-6	0.09-0.13	0.0-2.9	1.0-2.0	.02	.02	5	2	134
	13-71	72-95	0-27	1-8	1.40-1.60	6-20	0.06-0.12	0.0-2.9	0.1-0.5	.10	.10			
	71-80	75-97	0-24	1-10	1.40-1.60	6-20	0.05-0.11	0.0-2.9	0.0-0.5	.10	.10			
91A:														
Swygert-------------	0-12	2-15	50-71	27-35	1.30-1.50	0.2-0.6	0.19-0.22	3.0-5.9	3.0-5.0	.20	.20	4	6	48
	12-26	1-15	30-59	40-55	1.40-1.60	0.06-0.2	0.10-0.13	6.0-8.9	0.5-1.5	.32	.32			
	26-51	1-20	30-59	40-50	1.45-1.65	0.06-0.2	0.10-0.13	6.0-8.9	0.1-1.0	.32	.32			
	51-60	1-20	25-59	38-55	1.65-1.85	0.02-0.06	0.05-0.09	3.0-5.9	0.0-0.5	.37	.37			

Table 22.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
91B:														
Swygert-------------	0-11	2-15	50-71	27-35	1.30-1.50	0.2-0.6	0.19-0.22	3.0-5.9	3.0-5.0	.20	.20	4	6	48
	11-23	1-15	30-59	40-55	1.40-1.60	0.06-0.2	0.10-0.13	6.0-8.9	0.5-1.5	.32	.32			
	23-45	1-20	30-59	40-50	1.45-1.65	0.06-0.2	0.10-0.13	6.0-8.9	0.1-1.0	.32	.32			
	45-60	1-20	25-59	38-55	1.65-1.85	0.02-0.06	0.05-0.09	3.0-5.9	0.0-0.5	.37	.37			
91B2:														
Swygert-------------	0-7	2-15	47-68	30-38	1.35-1.55	0.2-0.6	0.18-0.21	3.0-5.9	2.0-4.0	.24	.24	4	6	48
	7-30	1-15	30-59	40-55	1.40-1.60	0.06-0.2	0.10-0.13	6.0-8.9	0.5-1.5	.32	.32			
	30-48	1-20	30-59	40-50	1.45-1.65	0.06-0.2	0.10-0.13	6.0-8.9	0.1-1.0	.32	.32			
	48-60	1-20	25-59	38-55	1.65-1.85	0.02-0.06	0.05-0.09	3.0-5.9	0.0-0.5	.37	.37			
91C2:														
Swygert-------------	0-7	2-15	47-68	30-38	1.35-1.55	0.2-0.6	0.18-0.21	3.0-5.9	2.0-4.0	.24	.24	4	6	48
	7-18	1-15	30-59	40-55	1.40-1.60	0.06-0.2	0.10-0.13	6.0-8.9	0.5-1.5	.32	.32			
	18-36	1-20	30-59	40-50	1.45-1.65	0.06-0.2	0.10-0.13	6.0-8.9	0.1-1.0	.32	.32			
	36-60	1-20	25-59	38-55	1.65-1.85	0.02-0.06	0.05-0.09	3.0-5.9	0.0-0.5	.37	.37			
93C2:														
Rodman--------------	0-8	30-52	23-55	8-25	1.20-1.50	2-6	0.10-0.12	0.0-2.9	2.0-3.0	.24	.28	3	8	0
	8-12	40-80	0-55	5-25	1.10-1.50	2-6	0.09-0.12	0.0-2.9	0.0-2.0	.24	.28			
	12-60	85-98	0-15	0-10	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			
98B:														
Ade-----------------	0-22	73-90	0-24	3-12	1.35-1.55	6-20	0.10-0.12	0.0-2.9	1.0-2.0	.02	.02	5	2	134
	22-29	80-97	0-17	3-12	1.40-1.60	6-20	0.06-0.11	0.0-2.9	0.2-1.0	.15	.15			
	29-60	65-98	0-32	3-16	1.40-1.60	6-20	0.06-0.14	0.0-2.9	0.2-0.5	.17	.17			
	60-80	85-98	0-14	1-8	1.50-1.70	6-20	0.05-0.07	0.0-2.9	0.0-0.5	.15	.15			
125A:														
Selma---------------	0-6	20-45	28-60	20-27	1.40-1.60	0.6-2	0.20-0.24	0.0-2.9	4.0-6.0	.24	.24	5	6	48
	6-13	20-45	20-53	27-35	1.40-1.60	0.6-2	0.17-0.19	3.0-5.9	3.0-5.0	.17	.17			
	13-44	15-62	6-67	18-32	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-2.0	.32	.32			
	44-80	30-90	0-63	7-18	1.60-1.90	2-6	0.07-0.19	0.0-2.9	0.0-1.0	.24	.24			
132A:														
Starks--------------	0-10	0-15	58-82	18-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	10-14	0-15	58-85	15-27	1.30-1.50	0.6-2	0.21-0.23	0.0-2.9	0.5-1.0	.49	.49			
	14-31	0-15	50-73	27-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	31-43	15-60	10-75	10-30	1.45-1.65	0.6-2	0.12-0.19	0.0-2.9	0.2-0.5	.32	.32			
	43-60	15-85	0-75	5-30	1.50-1.75	0.6-6	0.10-0.18	0.0-2.9	0.0-0.5	.28	.28			

Table 22.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
146A:														
Elliott-------------	0-6	2-15	58-78	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.24	.24	4	6	48
	6-11	2-15	50-71	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	2.5-4.0	.20	.20			
	11-16	1-20	30-61	40-50	1.40-1.60	0.06-0.6	0.10-0.13	6.0-8.9	0.5-1.5	.32	.32			
	16-41	5-20	40-65	27-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	41-60	5-20	45-65	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
146B:														
Elliott-------------	0-9	2-15	58-78	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.24	.24	4	6	48
	9-13	2-15	50-71	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	2.5-4.0	.20	.20			
	13-17	1-20	35-61	38-45	1.40-1.60	0.06-0.6	0.11-0.14	6.0-8.9	0.5-1.5	.32	.32			
	17-35	5-20	40-65	27-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	35-60	5-20	45-65	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
148A:														
Proctor-------------	0-11	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	11-28	0-10	55-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	28-33	15-70	0-67	18-32	1.30-1.55	0.6-2	0.13-0.16	3.0-5.9	0.2-1.0	.32	.32			
	33-60	15-85	0-80	5-20	1.40-1.70	0.6-6	0.07-0.19	0.0-2.9	0.2-0.5	.28	.28			
148B:														
Proctor-------------	0-11	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	11-28	0-10	55-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	28-33	15-70	0-67	18-32	1.30-1.55	0.6-2	0.13-0.16	3.0-5.9	0.2-1.0	.32	.32			
	33-60	15-85	0-80	5-20	1.40-1.70	0.6-6	0.07-0.19	0.0-2.9	0.2-0.5	.28	.28			
149A:														
Brenton-------------	0-12	0-15	58-80	20-27	1.25-1.45	0.6-2	0.22-0.26	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	12-28	0-15	50-75	25-35	1.30-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.5	.37	.37			
	28-44	15-60	10-67	18-30	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	44-60	15-85	0-80	5-30	1.50-1.70	0.6-6	0.11-0.20	0.0-2.9	0.0-0.5	.28	.28			
151A:														
Ridgeville----------	0-16	50-80	10-38	10-15	1.30-1.65	0.6-6	0.15-0.18	0.0-2.9	2.0-4.0	.17	.17	5	3	86
	16-40	45-70	8-43	12-22	1.45-1.70	0.6-6	0.15-0.19	0.0-2.9	0.2-1.0	.24	.24			
	40-60	60-95	0-37	3-10	1.55-1.90	2-20	0.05-0.13	0.0-2.9	0.0-0.5	.15	.15			
152A:														
Drummer-------------	0-14	0-15	50-73	27-35	1.10-1.30	0.6-2	0.21-0.23	3.0-5.9	4.0-7.0	.24	.24	5	6	48
	14-42	0-15	50-80	20-35	1.20-1.45	0.6-2	0.21-0.24	3.0-5.9	0.5-2.0	.37	.37			
	42-50	15-55	12-70	15-33	1.30-1.55	0.6-2	0.17-0.20	3.0-5.9	0.2-0.5	.32	.32			
	50-60	15-80	0-75	10-32	1.40-1.70	0.6-6	0.11-0.19	0.0-2.9	0.0-0.2	.28	.28			

Table 22.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
184A:														
Roby----------------	0-6	50-80	10-38	10-15	1.25-1.45	0.6-6	0.12-0.15	0.0-2.9	0.5-2.0	.24	.24	5	3	86
	6-15	50-85	2-47	3-15	1.25-1.55	0.6-6	0.09-0.15	0.0-2.9	0.2-0.5	.20	.20			
	15-32	45-70	12-43	12-18	1.40-1.70	0.6-6	0.12-0.19	0.0-2.9	0.1-0.5	.24	.24			
	32-60	60-95	0-37	3-15	1.50-1.85	2-20	0.04-0.17	0.0-2.9	0.0-0.5	.15	.15			
189A:														
Martinton-----------	0-12	5-25	50-70	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.24	.24	5	6	48
	12-39	5-25	30-60	35-45	1.25-1.45	0.2-0.6	0.11-0.20	3.0-5.9	0.5-2.0	.37	.37			
	39-60	10-65	5-75	15-42	1.40-1.60	0.2-0.6	0.11-0.22	3.0-5.9	0.0-0.5	.37	.37			
189B:														
Martinton-----------	0-10	5-25	50-70	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.24	.24	5	6	48
	10-34	5-25	30-60	35-45	1.25-1.45	0.2-0.6	0.11-0.20	3.0-5.9	0.5-2.0	.37	.37			
	34-60	10-65	5-75	15-42	1.40-1.60	0.2-0.6	0.11-0.22	3.0-5.9	0.0-0.5	.37	.37			
201A:														
Gilford-------------	0-22	50-75	7-40	10-18	1.45-1.65	2-6	0.16-0.18	0.0-2.9	3.0-5.0	.17	.17	5	3	86
	22-41	55-80	2-37	8-18	1.55-1.75	2-6	0.12-0.14	0.0-2.9	0.2-1.5	.24	.24			
	41-60	75-97	0-24	1-8	1.65-1.85	6-20	0.05-0.08	0.0-2.9	0.0-0.5	.05	.05			
223B:														
Varna---------------	0-12	5-20	53-75	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.5-4.0	.24	.24	4	6	48
	12-30	5-20	30-60	35-50	1.40-1.60	0.06-0.6	0.10-0.19	3.0-5.9	0.5-1.5	.37	.37			
	30-48	5-20	30-60	30-45	1.50-1.70	0.06-0.2	0.10-0.19	3.0-5.9	0.2-1.0	.37	.37			
	48-60	5-22	40-68	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
223B2:														
Varna---------------	0-7	5-20	53-75	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.28	.28	4	6	48
	7-26	5-20	30-60	35-50	1.40-1.60	0.06-0.6	0.10-0.19	3.0-5.9	0.5-1.5	.37	.37			
	26-38	5-20	30-60	30-45	1.50-1.70	0.06-0.2	0.10-0.19	3.0-5.9	0.2-1.0	.37	.37			
	38-60	5-22	40-68	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
223C2:														
Varna---------------	0-9	5-20	53-75	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.28	.28	4	6	48
	9-29	5-20	30-60	35-50	1.40-1.60	0.06-0.6	0.10-0.19	3.0-5.9	0.5-1.5	.37	.37			
	29-50	5-20	30-60	30-45	1.50-1.70	0.06-0.2	0.10-0.19	3.0-5.9	0.2-1.0	.37	.37			
	50-60	5-22	40-68	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
223C3:														
Varna---------------	0-6	5-20	45-68	27-35	1.30-1.50	0.2-0.6	0.10-0.21	3.0-5.9	0.5-2.0	.37	.37	3	6	48
	6-16	5-20	30-60	35-50	1.40-1.60	0.06-0.6	0.10-0.19	3.0-5.9	0.5-1.5	.37	.37			
	16-19	5-20	30-60	30-45	1.50-1.70	0.06-0.2	0.10-0.19	3.0-5.9	0.2-1.0	.37	.37			
	19-60	5-22	40-68	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			

Table 22.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
228A:														
Nappanee------------	0-5	5-20	53-75	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	5-8	5-20	53-77	18-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.37	.37			
	8-26	5-20	20-50	45-60	1.40-1.65	0.06-0.2	0.08-0.14	3.0-5.9	0.2-1.0	.32	.32			
	26-48	5-25	20-55	40-55	1.60-1.80	0.02-0.06	0.06-0.12	3.0-5.9	0.1-0.5	.32	.32			
	48-75	5-25	30-65	30-45	1.70-1.90	0.02-0.06	0.01-0.05	3.0-5.9	0.0-0.5	.37	.37			
228B:														
Nappanee------------	0-4	5-20	53-75	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	4-9	5-20	53-77	18-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.37	.37			
	9-23	5-20	20-50	45-60	1.40-1.65	0.06-0.2	0.08-0.14	3.0-5.9	0.2-1.0	.32	.32			
	23-46	5-25	20-55	40-55	1.60-1.80	0.02-0.06	0.06-0.12	3.0-5.9	0.1-0.5	.32	.32			
	46-60	5-25	30-65	30-45	1.70-1.90	0.02-0.06	0.01-0.05	3.0-5.9	0.0-0.5	.37	.37			
232A:														
Ashkum--------------	0-12	1-15	45-64	35-40	1.20-1.45	0.2-0.6	0.18-0.21	6.0-8.9	3.0-7.0	.20	.20	5	4	86
	12-29	2-15	40-63	35-45	1.30-1.50	0.2-0.6	0.15-0.18	6.0-8.9	0.5-2.5	.32	.32			
	29-54	5-20	40-65	30-40	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	54-60	5-20	45-68	27-35	1.55-1.75	0.2-0.6	0.07-0.15	3.0-5.9	0.0-0.5	.43	.43			
235A:														
Bryce---------------	0-13	2-15	40-58	40-50	1.30-1.50	0.2-0.6	0.12-0.16	6.0-8.9	4.0-7.0	.17	.17	5	4	86
	13-45	5-20	28-53	42-52	1.35-1.60	0.06-0.2	0.09-0.13	6.0-8.9	0.5-3.0	.32	.32			
	45-58	5-20	20-55	40-60	1.50-1.70	0.02-0.06	0.07-0.11	6.0-8.9	0.1-0.5	.32	.32			
	58-66	5-20	25-57	38-55	1.60-1.75	0.02-0.06	0.03-0.05	3.0-5.9	0.0-0.5	.37	.37			
241D3:														
Chatsworth----------	0-2	0-10	30-60	40-60	1.35-1.60	0.02-0.06	0.09-0.16	3.0-5.9	0.5-1.0	.32	.32	2	4	86
	2-22	0-10	30-65	35-60	1.50-1.70	0.02-0.06	0.05-0.07	3.0-5.9	0.0-0.5	.32	.32			
	22-60	5-15	35-60	35-50	1.70-1.90	0.02-0.06	0.03-0.05	3.0-5.9	0.0-0.5	.37	.37			
241E3:														
Chatsworth----------	0-7	0-10	30-60	40-60	1.35-1.60	0.02-0.06	0.09-0.16	3.0-5.9	0.5-1.0	.32	.32	2	4	86
	7-21	0-10	30-65	35-60	1.50-1.70	0.02-0.06	0.05-0.07	3.0-5.9	0.0-0.5	.32	.32			
	21-60	5-15	35-60	35-50	1.70-1.90	0.02-0.06	0.03-0.05	3.0-5.9	0.0-0.5	.37	.37			
241F:														
Chatsworth----------	0-4	0-10	50-73	27-40	1.40-1.65	0.02-0.06	0.14-0.19	3.0-5.9	1.0-2.0	.28	.28	3	6	48
	4-24	0-10	30-65	35-60	1.50-1.70	0.02-0.06	0.05-0.07	3.0-5.9	0.0-0.5	.32	.32			
	24-60	5-15	35-60	35-50	1.70-1.90	0.02-0.06	0.03-0.05	3.0-5.9	0.0-0.5	.32	.32			
241G:														
Chatsworth----------	0-5	0-10	50-73	27-40	1.40-1.65	0.02-0.06	0.14-0.19	3.0-5.9	1.0-2.0	.28	.28	3	6	48
	5-20	0-10	30-65	35-60	1.50-1.70	0.02-0.06	0.05-0.07	3.0-5.9	0.0-0.5	.32	.32			
	20-60	5-15	35-60	35-50	1.70-1.90	0.02-0.06	0.03-0.05	3.0-5.9	0.0-0.5	.37	.37			

Table 22.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
290B:														
Warsaw--------------	0-11	27-45	30-50	15-25	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	4	5	56
	11-29	20-70	5-55	17-30	1.35-1.60	0.6-2	0.16-0.19	3.0-5.9	0.5-2.0	.32	.32			
	29-60	85-98	0-13	2-8	1.40-1.65	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			
290C2:														
Warsaw--------------	0-8	10-30	50-75	15-25	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	2.0-3.0	.28	.28	4	5	56
	8-16	10-60	8-70	20-32	1.35-1.60	0.6-2	0.16-0.19	3.0-5.9	0.5-2.0	.32	.32			
	16-27	30-70	0-50	18-30	1.40-1.65	0.6-2	0.10-0.16	3.0-5.9	0.2-1.5	.28	.32			
	27-60	80-98	0-18	2-8	1.50-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
293A:														
Andres--------------	0-11	10-30	50-70	20-27	1.35-1.55	0.6-2	0.17-0.21	0.0-2.9	3.5-5.0	.24	.24	5	6	48
	11-36	15-50	15-58	24-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.5-1.5	.32	.32			
	36-50	5-20	45-68	27-35	1.55-1.75	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	50-60	5-20	45-73	22-35	1.65-1.85	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
294A:														
Symerton------------	0-12	10-30	50-70	20-27	1.30-1.50	0.6-2	0.17-0.21	0.0-2.9	2.5-4.0	.24	.24	5	6	48
	12-18	10-20	45-63	27-35	1.40-1.60	0.6-2	0.17-0.22	3.0-5.9	0.5-2.0	.32	.32			
	18-41	25-50	15-50	24-35	1.45-1.70	0.6-2	0.10-0.15	3.0-5.9	0.1-1.0	.32	.32			
	41-50	2-20	45-74	24-35	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	50-60	2-20	48-78	20-32	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
294B:														
Symerton------------	0-15	10-30	50-70	20-27	1.30-1.50	0.6-2	0.17-0.21	0.0-2.9	2.5-4.0	.24	.24	5	6	48
	15-19	10-20	45-63	27-35	1.40-1.60	0.6-2	0.17-0.22	3.0-5.9	1.0-3.0	.24	.24			
	19-35	25-50	15-50	24-35	1.45-1.70	0.6-2	0.10-0.15	3.0-5.9	0.1-1.0	.28	.32			
	35-39	2-20	45-74	24-35	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	39-60	2-20	48-78	20-32	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
294C2:														
Symerton------------	0-8	10-30	50-70	20-27	1.30-1.50	0.6-2	0.17-0.21	0.0-2.9	2.0-3.0	.28	.28	5	6	48
	8-31	25-50	15-50	24-35	1.45-1.70	0.6-2	0.10-0.15	3.0-5.9	0.1-1.0	.32	.32			
	31-40	2-20	45-74	24-35	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	40-60	2-20	48-78	20-32	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
298A:														
Beecher-------------	0-9	2-15	58-78	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28	4	6	48
	9-21	2-15	35-63	35-50	1.40-1.60	0.06-0.6	0.11-0.15	3.0-5.9	0.2-1.0	.37	.37			
	21-37	5-20	40-65	27-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	37-60	5-20	45-65	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			

Table 22.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
298B:														
Beecher-------------	0-7	2-15	58-78	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28	4	6	48
	7-24	2-15	35-63	35-50	1.40-1.60	0.06-0.6	0.11-0.15	3.0-5.9	0.2-1.0	.37	.37			
	24-36	5-20	40-65	27-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	36-60	5-20	45-65	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
315A:														
Channahon-----------	0-8	10-30	50-72	18-27	1.20-1.40	0.6-2	0.17-0.23	0.0-2.9	2.0-4.0	.24	.24	2	6	48
	8-16	15-50	15-60	25-35	1.35-1.60	0.6-2	0.14-0.22	3.0-5.9	0.0-1.5	.32	.32			
	16-60	---	---	---	---	0.06-0.6	---	---	---	---	---			
315B:														
Channahon-----------	0-11	10-30	50-72	18-27	1.20-1.40	0.6-2	0.17-0.23	0.0-2.9	2.0-4.0	.24	.24	2	6	48
	11-18	15-50	15-60	25-35	1.35-1.60	0.6-2	0.14-0.22	3.0-5.9	0.0-1.5	.32	.32			
	18-60	---	---	---	---	0.06-0.6	---	---	---	---	---			
315C2:														
Channahon-----------	0-6	10-30	50-72	18-27	1.20-1.40	0.6-2	0.17-0.23	0.0-2.9	2.0-3.0	.28	.28	2	6	48
	6-13	15-50	15-60	25-35	1.35-1.60	0.6-2	0.14-0.22	3.0-5.9	0.0-1.5	.32	.32			
	13-60	---	---	---	---	0.06-0.6	---	---	---	---	---			
318B:														
Lorenzo-------------	0-9	25-40	33-50	18-27	1.25-1.40	0.6-2	0.20-0.22	0.0-2.9	2.0-4.0	.24	.24	3	6	48
	9-18	30-80	5-50	20-35	1.60-1.70	2-6	0.10-0.19	3.0-5.9	0.0-1.0	.28	.32			
	18-60	85-99	0-14	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
329A:														
Will----------------	0-16	5-20	45-68	27-35	1.25-1.40	0.6-2	0.18-0.23	3.0-5.9	4.0-6.0	.20	.20	4	6	48
	16-24	15-50	20-62	23-33	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.5-2.0	.32	.32			
	24-60	90-99	0-10	0-10	1.65-1.85	20-100	0.02-0.04	0.0-2.9	0.1-1.0	.02	.05			
330A:														
Peotone-------------	0-13	0-10	50-67	33-40	1.20-1.40	0.2-0.6	0.21-0.23	6.0-8.9	5.0-7.0	.24	.24	5	4	86
	13-50	0-10	45-65	35-45	1.30-1.60	0.2-0.6	0.11-0.20	6.0-8.9	0.5-3.0	.37	.37			
	50-60	0-20	38-75	25-42	1.40-1.65	0.2-0.6	0.10-0.20	6.0-8.9	0.2-0.5	.43	.43			
343A:														
Kane----------------	0-11	5-25	50-77	18-27	1.30-1.50	0.6-2	0.20-0.24	0.0-2.9	3.0-5.0	.24	.24	4	6	48
	11-26	5-25	40-70	25-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.5-1.5	.32	.32			
	26-34	30-60	10-50	15-30	1.40-1.60	0.6-2	0.12-0.18	3.0-5.9	0.2-1.0	.32	.32			
	34-60	85-99	0-14	1-10	1.60-1.85	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			

Table 22.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
354B:														
Hononegah-----------	0-18	78-88	2-18	3-12	1.60-1.70	6-20	0.04-0.06	0.0-2.9	1.0-2.0	.02	.02	4	2	134
	18-32	70-95	0-25	5-15	1.60-1.70	6-20	0.03-0.05	0.0-2.9	0.2-0.5	.10	.10			
	32-60	75-98	0-20	2-7	1.60-1.70	20-100	0.02-0.03	0.0-2.9	0.0-0.5	.02	.05			
354D:														
Hononegah-----------	0-14	78-88	2-18	3-12	1.60-1.70	6-20	0.04-0.06	0.0-2.9	1.0-2.0	.02	.02	4	2	134
	14-38	70-95	0-25	5-15	1.60-1.70	6-20	0.03-0.05	0.0-2.9	0.2-0.5	.10	.10			
	38-60	75-98	0-20	2-7	1.60-1.70	20-100	0.02-0.03	0.0-2.9	0.0-0.5	.02	.05			
356A:														
Elpaso--------------	0-21	1-10	55-72	27-35	1.15-1.35	0.6-2	0.21-0.23	3.0-5.9	4.0-7.0	.24	.24	5	6	48
	21-44	1-10	50-75	24-40	1.20-1.40	0.6-2	0.22-0.24	3.0-5.9	0.2-2.0	.37	.37			
	44-69	2-30	30-78	20-40	1.35-1.60	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	69-80	2-30	40-83	15-30	1.60-1.85	0.2-0.6	0.05-0.15	0.0-2.9	0.0-0.5	.43	.43			
494B:														
Kankakee------------	0-11	50-65	15-40	10-20	1.35-1.55	0.6-2	0.18-0.22	0.0-2.9	2.0-4.0	.24	.24	4	3	86
	11-14	35-65	5-47	18-35	1.40-1.60	0.6-2	0.12-0.19	3.0-5.9	0.2-1.0	.32	.32			
	14-21	35-70	5-50	10-25	1.45-1.65	0.6-6	0.07-0.15	0.0-2.9	0.1-0.5	.24	.28			
	21-60	35-75	5-50	5-20	1.50-1.70	2-6	0.05-0.13	0.0-2.9	0.0-0.5	.17	.24			
503A:														
Rockton-------------	0-17	15-35	40-65	18-25	1.30-1.45	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.24	.24	3	6	48
	17-28	20-50	20-55	25-35	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.5-1.5	.32	.32			
	28-34	15-40	20-50	35-60	1.35-1.45	0.06-0.6	0.09-0.15	6.0-8.9	0.0-0.5	.17	.20			
	34-60	---	---	---	---	0.06-0.6	---	---	---	---	---			
503B:														
Rockton-------------	0-11	15-35	40-65	18-25	1.30-1.45	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.24	.24	3	6	48
	11-27	20-50	20-55	25-35	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.5-1.5	.32	.32			
	27-31	15-40	20-50	35-60	1.35-1.45	0.06-0.6	0.09-0.15	6.0-8.9	0.0-0.5	.17	.20			
	31-60	---	---	---	---	0.06-0.6	---	---	---	---	---			
513A:														
Granby--------------	0-8	55-75	7-43	2-18	1.30-1.60	2-6	0.12-0.17	0.0-2.9	3.0-5.0	.17	.17	5	3	86
	8-17	75-95	0-25	0-14	1.35-1.55	6-20	0.07-0.12	0.0-2.9	0.5-2.0	.05	.05			
	17-30	75-95	0-25	0-14	1.45-1.65	6-20	0.06-0.11	0.0-2.9	0.2-1.5	.10	.10			
	30-80	80-98	0-20	0-10	1.50-1.70	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.05			
516A:														
Faxon---------------	0-5	15-35	40-65	18-25	1.30-1.45	0.6-2	0.22-0.24	0.0-2.9	4.0-6.0	.24	.24	3	6	48
	5-13	20-50	20-55	22-32	1.35-1.50	0.6-2	0.17-0.22	3.0-5.9	2.0-4.0	.24	.24			
	13-25	20-50	20-55	25-35	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-1.5	.32	.32			
	25-60	---	---	---	---	0.06-0.6	---	---	---	---	---			

Table 22.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
530B:														
Ozaukee-------------	0-4	5-15	58-80	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	4-10	5-15	58-80	15-27	1.35-1.55	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.37	.37			
	10-21	5-15	35-60	35-50	1.60-1.70	0.06-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.37	.37			
	21-39	5-20	38-65	30-42	1.65-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	39-60	5-23	42-68	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
530C2:														
Ozaukee-------------	0-6	5-15	58-80	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.32	.32	4	6	48
	6-21	5-15	35-60	35-50	1.60-1.70	0.06-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.37	.37			
	21-28	5-20	38-65	30-42	1.65-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	28-60	5-23	42-68	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
530C3:														
Ozaukee-------------	0-9	5-15	45-68	27-40	1.45-1.60	0.2-0.6	0.10-0.21	3.0-5.9	0.5-1.0	.37	.37	3	6	48
	9-21	5-15	35-60	35-50	1.60-1.70	0.06-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.37	.37			
	21-27	5-20	38-65	30-42	1.65-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	27-60	5-23	42-68	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
530D2:														
Ozaukee-------------	0-6	5-15	58-80	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.32	.32	4	6	48
	6-20	5-15	35-60	35-50	1.60-1.70	0.06-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.37	.37			
	20-28	5-20	38-65	30-42	1.65-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	28-60	5-23	42-68	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
530D3:														
Ozaukee-------------	0-9	5-15	45-68	27-40	1.45-1.60	0.2-0.6	0.10-0.21	3.0-5.9	0.5-1.0	.37	.37	3	6	48
	9-21	5-15	35-60	35-50	1.60-1.70	0.06-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.37	.37			
	21-25	5-20	38-65	30-42	1.65-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	25-60	5-23	42-68	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
530E2:														
Ozaukee-------------	0-6	5-15	58-80	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.32	.32	4	6	48
	6-27	5-15	35-60	35-50	1.60-1.70	0.06-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.37	.37			
	27-31	5-20	38-65	30-42	1.65-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	31-60	5-23	42-68	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
530F:														
Ozaukee-------------	0-5	5-15	58-80	15-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	5-29	5-15	35-60	35-50	1.60-1.70	0.06-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.37	.37			
	29-36	5-20	38-65	30-42	1.65-1.75	0.06-0.2	0.10-0.20	3.0-5.9	0.1-0.5	.37	.37			
	36-60	5-23	42-68	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
536.														
Dumps														

Table 22.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Kf	T	Wind erodibility group	Wind erodibility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
541B:														
Graymont------------	0-12	0-10	63-78	22-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	12-33	0-10	55-75	25-35	1.30-1.50	0.6-2	0.16-0.20	3.0-5.9	0.2-2.0	.37	.37			
	33-38	10-20	40-68	22-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	38-60	10-20	50-66	24-34	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
541C2:														
Graymont------------	0-9	0-10	63-78	22-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.37	.37	5	6	48
	9-30	0-10	55-75	25-35	1.30-1.50	0.6-2	0.16-0.20	3.0-5.9	0.2-2.0	.37	.37			
	30-38	10-20	40-68	22-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	38-60	10-20	50-66	24-34	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
553A:														
Bryce---------------	0-17	2-15	40-58	40-50	1.30-1.50	0.2-0.6	0.12-0.16	6.0-8.9	4.0-7.0	.17	.17	4	4	86
	17-36	5-20	28-53	42-52	1.35-1.60	0.06-0.2	0.09-0.13	6.0-8.9	0.5-3.0	.32	.32			
	36-43	5-20	20-55	40-60	1.50-1.70	0.02-0.06	0.07-0.11	6.0-8.9	0.1-1.0	.32	.32			
	43-60	---	---	---	---	0.06-0.6	---	---	---	---	---			
Calamine------------	0-12	2-15	40-58	40-50	1.30-1.50	0.2-0.6	0.12-0.16	6.0-8.9	4.0-7.0	.17	.17	3	4	86
	12-29	5-20	28-53	42-52	1.35-1.60	0.06-0.2	0.09-0.13	6.0-8.9	0.5-3.0	.32	.32			
	29-33	5-20	20-55	40-60	1.50-1.70	0.02-0.06	0.07-0.11	6.0-8.9	0.1-1.0	.32	.32			
	33-60	---	---	---	---	0.06-0.6	---	---	---	---	---			
555A:														
Shadeland-----------	0-9	5-25	50-77	18-27	1.30-1.45	0.6-2	0.19-0.24	0.0-2.9	2.0-4.0	.28	.28	3	6	48
	9-13	5-25	50-80	15-25	1.35-1.50	0.6-2	0.18-0.23	0.0-2.9	0.2-1.0	.37	.37			
	13-23	5-25	45-75	20-35	1.40-1.55	0.6-2	0.16-0.22	3.0-5.9	0.2-0.5	.32	.32			
	23-36	20-50	20-52	20-35	1.40-1.60	0.2-2	0.14-0.19	3.0-5.9	0.0-0.2	.32	.32			
	36-60	---	---	---	---	0.06-0.6	---	---	---	---	---			
556B:														
High Gap------------	0-9	5-25	50-77	18-27	1.30-1.45	0.6-2	0.19-0.24	0.0-2.9	2.0-4.0	.28	.28	3	6	48
	9-28	15-45	25-65	20-35	1.40-1.60	0.6-2	0.16-0.22	3.0-5.9	0.2-0.5	.32	.32			
	28-36	25-65	10-52	15-30	1.45-1.65	0.6-2	0.12-0.19	0.0-2.9	0.0-0.2	.32	.32			
	36-60	---	---	---	---	0.06-0.6	---	---	---	---	---			
570B:														
Martinsville--------	0-7	30-50	30-50	10-20	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	5	56
	7-13	30-57	35-50	8-20	1.35-1.50	0.6-2	0.19-0.23	0.0-2.9	0.5-1.5	.37	.37			
	13-48	12-60	7-68	20-33	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.32	.32			
	48-63	20-65	10-65	15-25	1.40-1.60	0.6-2	0.12-0.17	0.0-2.9	0.1-0.5	.28	.28			
	63-80	20-90	0-75	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.5	.24	.24			

Table 22.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
570C2:														
Martinsville--------	0-6	30-50	30-50	10-20	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	6-9	30-57	35-50	8-20	1.35-1.50	0.6-2	0.19-0.23	0.0-2.9	0.5-1.5	.37	.37			
	9-35	12-60	7-68	20-33	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.32	.32			
	35-54	20-65	10-65	15-25	1.40-1.60	0.6-2	0.12-0.17	0.0-2.9	0.1-0.5	.28	.28			
	54-80	20-90	0-75	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.5	.24	.24			
570D2:														
Martinsville--------	0-5	30-50	30-50	10-20	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	5-13	30-57	35-50	8-20	1.35-1.50	0.6-2	0.19-0.23	0.0-2.9	0.5-1.5	.37	.37			
	13-35	12-60	7-68	20-33	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.32	.32			
	35-55	20-65	10-65	15-25	1.40-1.60	0.6-2	0.12-0.17	0.0-2.9	0.1-0.5	.28	.28			
	55-80	20-90	0-75	5-20	1.50-1.70	0.6-6	0.08-0.17	0.0-2.9	0.0-0.5	.24	.24			
594A:														
Reddick-------------	0-13	20-45	20-50	27-35	1.25-1.45	0.6-2	0.17-0.23	3.0-5.9	4.0-6.0	.17	.17	5	6	48
	13-32	15-50	20-55	22-35	1.45-1.65	0.6-2	0.15-0.20	3.0-5.9	0.5-2.0	.32	.32			
	32-47	5-20	40-65	30-45	1.50-1.70	0.2-0.6	0.12-0.18	3.0-5.9	0.2-1.0	.37	.37			
	47-60	5-20	40-65	25-43	1.60-1.80	0.06-0.2	0.07-0.15	3.0-5.9	0.0-0.5	.43	.43			
614A:														
Chenoa--------------	0-12	1-8	57-72	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	3.5-5.0	.28	.28	5	6	48
	12-32	1-8	47-64	35-45	1.30-1.50	0.2-0.6	0.18-0.21	6.0-8.9	0.5-1.5	.37	.37			
	32-36	5-20	40-70	25-40	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	36-60	5-20	45-71	24-35	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
672A:														
Cresent-------------	0-15	25-55	23-65	10-22	1.30-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.24	.24	4	5	56
	15-46	25-65	3-55	20-32	1.40-1.60	0.6-2	0.13-0.19	3.0-5.9	0.5-1.0	.32	.32			
	46-60	70-98	0-28	2-10	1.50-1.70	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.05			
672B:														
Cresent-------------	0-7	25-55	23-65	10-22	1.30-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.24	.24	4	5	56
	7-11	25-55	23-65	10-22	1.35-1.55	0.6-2	0.17-0.22	0.0-2.9	0.5-1.0	.24	.24			
	11-41	25-65	3-55	20-32	1.40-1.60	0.6-2	0.13-0.19	3.0-5.9	0.5-1.0	.32	.32			
	41-60	70-98	0-28	2-10	1.50-1.70	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.05	.05			
688B:														
Braidwood-----------	0-9	25-50	28-50	18-27	1.30-1.60	0.6-2	0.17-0.20	0.0-2.9	0.5-4.0	.32	.32	5	4L	86
	9-22	20-50	28-62	18-27	1.40-1.70	0.6-2	0.15-0.18	0.0-2.9	0.2-1.0	.43	.43			
	22-42	20-70	10-65	5-27	1.70-2.00	0.6-2	0.09-0.16	0.0-2.9	0.2-1.0	.43	.43			
	42-64	20-90	5-65	3-27	1.80-2.10	0.2-0.6	0.06-0.12	0.0-2.9	0.2-1.0	.43	.43			

Table 22.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
688D:														
Braidwood-----------	0-8	25-50	28-50	18-27	1.30-1.60	0.6-2	0.17-0.20	0.0-2.9	0.5-4.0	.32	.32	5	4L	86
	8-16	20-50	28-62	18-27	1.40-1.70	0.6-2	0.15-0.18	0.0-2.9	0.2-1.0	.43	.43			
	16-42	20-70	10-65	5-27	1.70-2.00	0.6-2	0.09-0.16	0.0-2.9	0.2-1.0	.43	.43			
	42-65	20-90	5-65	3-27	1.80-2.10	0.2-0.6	0.06-0.12	0.0-2.9	0.2-1.0	.43	.43			
688G:														
Braidwood-----------	0-6	25-50	28-50	18-27	1.30-1.60	0.6-2	0.17-0.20	0.0-2.9	0.5-4.0	.32	.32	5	4L	86
	6-15	20-50	28-62	18-27	1.40-1.70	0.6-2	0.15-0.18	0.0-2.9	0.2-1.0	.43	.43			
	15-37	20-70	10-65	5-27	1.70-2.00	0.6-2	0.09-0.16	0.0-2.9	0.2-1.0	.43	.43			
	37-65	20-90	5-65	3-27	1.80-2.10	0.2-0.6	0.06-0.12	0.0-2.9	0.2-1.0	.43	.43			
740A:														
Darroch-------------	0-15	10-30	50-75	12-26	1.30-1.40	0.6-2	0.20-0.24	0.0-2.9	2.5-4.0	.24	.24	5	5	56
	15-21	10-45	25-70	18-35	1.45-1.60	0.6-2	0.18-0.22	3.0-5.9	0.5-1.5	.32	.32			
	21-29	25-65	10-50	18-35	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	29-60	15-60	20-75	5-20	1.50-1.70	0.6-6	0.11-0.21	0.0-2.9	0.0-0.5	.28	.28			
741B:														
Oakville------------	0-7	85-100	0-15	0-10	1.30-1.55	6-20	0.07-0.09	0.0-2.9	0.5-2.0	.02	.02	5	1	220
	7-40	75-100	0-25	0-10	1.35-1.65	6-20	0.06-0.11	0.0-2.9	0.1-0.5	.15	.15			
	40-60	75-100	0-25	0-10	1.40-1.65	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			
741D:														
Oakville------------	0-6	85-100	0-15	0-10	1.30-1.55	6-20	0.07-0.09	0.0-2.9	0.5-2.0	.02	.02	5	1	220
	6-30	75-100	0-25	0-10	1.35-1.65	6-20	0.06-0.11	0.0-2.9	0.1-0.5	.15	.15			
	30-60	75-100	0-25	0-10	1.40-1.65	6-20	0.05-0.10	0.0-2.9	0.0-0.5	.15	.15			
802B:														
Orthents, loamy-----	0-6	23-50	28-50	22-27	1.70-1.75	0.2-0.6	0.18-0.22	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	6-60	20-52	25-58	22-30	1.70-1.80	0.2-0.6	0.12-0.20	3.0-5.9	0.2-1.0	.43	.43			
802D:														
Orthents, loamy-----	0-6	23-52	28-50	22-27	1.70-1.75	0.2-0.6	0.18-0.22	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	6-60	20-52	25-58	22-30	1.70-1.80	0.2-0.6	0.12-0.20	3.0-5.9	0.2-1.0	.43	.43			
817A:														
Channahon-----------	0-11	53-75	7-40	5-15	1.40-1.70	0.6-6	0.14-0.18	0.0-2.9	2.0-4.0	.20	.20	2	3	86
	11-16	35-75	7-50	10-18	1.50-1.70	0.6-6	0.12-0.19	0.0-2.9	0.2-1.0	.20	.20			
	16-19	60-95	0-35	1-8	1.55-1.70	2-20	0.05-0.12	0.0-2.9	0.0-0.5	.10	.15			
	19-60	---	---	---	---	0.2-2	---	---	---	---	---			
Hesch---------------	0-12	53-75	7-40	5-15	1.40-1.70	0.6-6	0.14-0.18	0.0-2.9	2.0-4.0	.20	.20	3	3	86
	12-27	35-75	7-50	10-18	1.50-1.70	0.6-6	0.12-0.19	0.0-2.9	0.2-1.0	.24	.24			
	27-32	60-95	0-35	1-8	1.55-1.70	2-20	0.05-0.12	0.0-2.9	0.0-0.5	.15	.15			
	32-60	---	---	---	---	0.2-2	---	---	---	---	---			

Table 22.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
817B:														
Channahon-----------	0-7	53-75	7-40	5-15	1.40-1.70	0.6-6	0.14-0.18	0.0-2.9	2.0-4.0	.20	.20	2	3	86
	7-15	35-75	7-50	10-18	1.50-1.70	0.6-6	0.12-0.19	0.0-2.9	0.2-1.0	.20	.20			
	15-60	---	---	---	---	0.2-2	---	---	---	---	---			
Hesch---------------	0-11	53-75	7-40	5-15	1.40-1.70	0.6-6	0.14-0.18	0.0-2.9	2.0-4.0	.20	.20	3	3	86
	11-23	35-75	7-50	10-18	1.50-1.70	0.6-6	0.12-0.19	0.0-2.9	0.2-1.0	.24	.24			
	23-60	---	---	---	---	0.2-2	---	---	---	---	---			
830.														
Landfills														
863.														
Pits, clay														
865.														
Pits, gravel														
871D:														
Lenzburg------------	0-5	15-50	15-65	20-35	1.30-1.60	0.6-2	0.17-0.22	3.0-5.9	0.5-1.0	.32	.32	5	4L	86
	5-37	15-50	15-65	20-35	1.30-1.60	0.2-0.6	0.15-0.18	3.0-5.9	0.2-1.0	.37	.43			
	37-80	15-45	20-65	20-35	1.40-1.70	0.2-0.6	0.11-0.20	3.0-5.9	0.2-1.0	.32	.43			
871G:														
Lenzburg------------	0-5	15-50	15-65	20-35	1.30-1.60	0.6-2	0.17-0.22	3.0-5.9	0.5-1.0	.32	.32	5	4L	86
	5-37	15-50	15-65	20-35	1.30-1.60	0.2-0.6	0.15-0.18	3.0-5.9	0.2-1.0	.37	.43			
	37-80	15-45	20-65	20-35	1.40-1.70	0.2-0.6	0.11-0.17	3.0-5.9	0.2-1.0	.32	.43			
1107A:														
Sawmill-------------	0-28	3-15	58-70	27-35	1.25-1.40	0.6-2	0.19-0.22	3.0-5.9	4.0-7.0	.28	.28	5	6	48
	28-42	5-20	45-68	27-35	1.30-1.45	0.6-2	0.17-0.20	3.0-5.9	1.0-3.5	.32	.32			
	42-60	5-25	40-70	25-35	1.35-1.50	0.6-2	0.17-0.20	3.0-5.9	0.2-2.0	.32	.32			
3073A:														
Ross----------------	0-23	23-50	35-50	15-27	1.20-1.45	0.6-2	0.19-0.24	0.0-2.9	3.0-5.0	.32	.32	5	6	48
	23-54	10-42	40-58	18-32	1.20-1.50	0.6-2	0.16-0.22	0.0-2.9	0.5-1.0	.32	.32			
	54-60	20-60	35-55	5-25	1.35-1.60	0.6-6	0.05-0.18	0.0-2.9	0.1-0.5	.32	.32			
3107A:														
Sawmill-------------	0-29	3-15	58-70	27-35	1.25-1.40	0.6-2	0.19-0.22	3.0-5.9	4.0-7.0	.28	.28	5	6	48
	29-48	5-20	45-68	27-35	1.30-1.45	0.6-2	0.17-0.20	3.0-5.9	1.0-3.5	.32	.32			
	48-60	5-25	40-70	25-35	1.35-1.50	0.6-2	0.17-0.20	3.0-5.9	0.2-2.0	.32	.32			

Table 22.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
3451A:														
Lawson--------------	0-14	0-15	58-85	15-27	1.20-1.50	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.32	.32	5	5	56
	14-33	0-15	55-85	15-30	1.20-1.50	0.6-2	0.18-0.22	0.0-2.9	2.0-4.0	.32	.32			
	33-80	5-40	30-77	18-30	1.45-1.65	0.6-2	0.18-0.20	3.0-5.9	0.2-2.0	.49	.49			
3776A:														
Comfrey-------------	0-7	15-45	28-55	18-27	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	5.0-7.0	.32	.32	5	6	48
	7-26	15-45	20-55	18-35	1.20-1.40	0.6-2	0.16-0.20	3.0-5.9	1.0-4.0	.32	.32			
	26-63	15-55	10-55	15-35	1.30-1.50	0.6-2	0.15-0.19	3.0-5.9	0.5-2.0	.32	.32			
4107A:														
Sawmill-------------	0-5	0-15	58-85	15-27	1.10-1.30	0.6-2	0.25-0.30	0.0-2.9	7.0-15	.28	.28	5	6	48
	5-25	3-15	58-70	27-35	1.25-1.40	0.6-2	0.19-0.22	3.0-5.9	4.0-7.0	.28	.28			
	25-43	5-20	45-68	27-35	1.30-1.45	0.6-2	0.17-0.20	3.0-5.9	1.0-3.5	.32	.32			
	43-60	5-25	40-70	25-35	1.35-1.50	0.6-2	0.17-0.20	3.0-5.9	0.2-2.0	.32	.32			
4516A:														
Faxon---------------	0-5	15-35	40-65	18-25	1.20-1.35	0.6-2	0.25-0.30	0.0-2.9	7.0-15	.20	.20	3	6	48
	5-13	20-45	23-60	20-32	1.35-1.50	0.6-2	0.17-0.22	3.0-5.9	2.0-4.0	.24	.24			
	13-25	20-50	20-55	23-35	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-1.5	.32	.32			
	25-60	---	---	---	---	0.06-0.6	---	---	---	---	---			
4904A:														
Muskego-------------	0-5	---	---	---	0.10-0.21	0.6-6	0.35-0.45	---	60-90	---	---	1	2	134
	5-36	---	---	---	0.10-0.21	0.6-6	0.35-0.45	---	60-90	---	---			
	36-80	0-20	50-80	18-35	0.30-1.10	0.06-0.2	0.18-0.24	3.0-5.9	6.0-20	.32	.32			
Peotone-------------	0-24	0-10	50-67	33-40	1.20-1.40	0.2-0.6	0.21-0.23	6.0-8.9	5.0-7.0	.24	.24	5	4	86
	24-53	0-10	45-65	35-45	1.30-1.60	0.2-0.6	0.11-0.20	6.0-8.9	0.5-3.0	.37	.37			
	53-60	0-20	38-75	25-42	1.40-1.65	0.2-0.6	0.10-0.20	6.0-8.9	0.2-0.5	.43	.43			
8073A:														
Ross----------------	0-32	23-50	35-50	15-27	1.20-1.45	0.6-2	0.19-0.24	0.0-2.9	3.0-5.0	.32	.32	5	6	48
	32-50	10-42	40-58	18-32	1.20-1.50	0.6-2	0.16-0.22	3.0-5.9	0.5-1.0	.32	.32			
	50-60	20-60	35-55	5-25	1.35-1.60	0.6-6	0.05-0.18	0.0-2.9	0.1-0.5	.32	.32			
8107A:														
Sawmill-------------	0-26	2-15	58-71	27-35	1.25-1.45	0.6-2	0.19-0.22	3.0-5.9	4.0-7.0	.28	.28	5	6	48
	26-53	5-20	45-70	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	2.0-7.0	.32	.32			
	53-60	5-21	44-70	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	1.0-3.0	.28	.28			
8404A:														
Titus---------------	0-13	2-9	51-63	35-40	1.30-1.50	0.06-0.2	0.18-0.22	6.0-8.9	2.0-4.0	.28	.28	5	4	86
	13-68	2-15	40-63	35-45	1.30-1.60	0.06-0.2	0.11-0.22	6.0-8.9	0.2-1.0	.32	.32			
	68-80	15-30	40-65	20-30	1.45-1.75	0.2-0.6	0.10-0.20	3.0-5.9	0.2-0.5	.32	.32			

Table 22.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
8451A:														
Lawson--------------	0-13	0-15	58-85	15-27	1.20-1.50	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.32	.32	5	5	56
	13-53	0-15	55-85	15-30	1.20-1.50	0.6-2	0.18-0.22	0.0-2.9	2.0-4.0	.32	.32			
	53-80	5-40	30-77	18-30	1.45-1.65	0.6-2	0.18-0.20	3.0-5.9	0.2-2.0	.49	.49			
8776A:														
Comfrey-------------	0-8	15-45	28-55	18-27	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	5.0-7.0	.32	.32	5	6	48
	8-29	15-45	20-55	18-35	1.20-1.40	0.6-2	0.16-0.20	3.0-5.9	1.0-4.0	.32	.32			
	29-65	15-55	10-55	15-35	1.30-1.50	0.6-2	0.15-0.19	3.0-5.9	0.5-2.0	.32	.32			

Table 23.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
23A:					
Blount---------------	0-7	13-20	---	5.1-7.3	0
	7-13	7.0-16	7.1-15	5.1-7.3	0
	13-26	17-26	---	4.5-6.5	0
	26-32	13-24	---	6.1-7.8	0-25
	32-60	13-21	---	7.4-8.4	15-35
23B:					
Blount---------------	0-6	13-20	---	5.1-7.3	0
	6-10	7.0-16	---	5.1-7.3	0
	10-23	17-26	---	4.5-6.5	0
	23-34	13-24	---	6.1-7.8	0-25
	34-60	13-21	---	7.4-8.4	15-35
42A:					
Papineau-------------	0-10	9.0-17	---	5.6-7.3	0
	10-13	11-22	---	5.6-7.3	0
	13-32	9.0-19	---	5.6-7.3	0
	32-41	11-29	---	6.6-8.4	0-15
	41-60	8.0-22	---	7.4-8.4	5-30
49A:					
Watseka--------------	0-10	3.0-13	---	5.6-7.3	0
	10-32	1.0-7.0	---	5.1-7.3	0
	32-60	1.0-7.0	---	5.6-7.3	0
69A:					
Milford--------------	0-9	26-36	---	5.6-7.3	0
	9-22	28-36	---	5.6-7.3	0
	22-50	22-29	---	5.6-7.8	0-10
	50-60	4.0-18	---	6.6-8.4	0-30
88B:					
Sparta---------------	0-13	2.0-12	---	5.1-7.3	0
	13-71	1.0-6.0	---	5.1-7.3	0
	71-80	1.0-7.0	---	5.1-7.8	0
91A:					
Swygert--------------	0-12	20-31	---	5.6-7.3	0
	12-26	20-31	---	5.6-7.3	0
	26-51	10-25	---	7.4-8.4	2-20
	51-60	9.0-20	---	7.9-8.4	15-30
91B:					
Swygert--------------	0-11	20-31	---	5.6-7.3	0
	11-23	20-31	---	5.6-7.3	0
	23-45	10-25	---	7.4-8.4	2-20
	45-60	9.0-20	---	7.9-8.4	15-30
91B2:					
Swygert--------------	0-7	20-31	---	5.6-7.3	0
	7-30	20-31	---	5.6-7.3	0
	30-48	10-25	---	7.4-8.4	2-20
	48-60	9.0-20	---	7.9-8.4	15-30

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
91C2:					
Swygert	0-7	20-31	---	5.6-7.3	0
	7-18	20-31	---	5.6-7.3	0
	18-36	10-25	---	7.4-8.4	2-20
	36-60	9.0-20	---	7.9-8.4	15-30
93C2:					
Rodman	0-8	8.0-19	---	6.6-7.8	0-15
	8-12	2.0-17	---	6.6-7.8	0-25
	12-60	0.0-7.0	---	7.4-8.4	10-45
98B:					
Ade	0-22	3.0-12	---	5.1-6.5	0
	22-29	2.0-10	---	5.1-6.0	0
	29-60	2.0-11	---	5.6-7.3	0
	60-80	1.0-6.0	---	6.1-7.8	0-10
125A:					
Selma	0-6	20-28	---	6.1-7.8	0
	6-13	22-31	---	6.1-7.8	0
	13-44	11-23	---	6.1-8.4	0-20
	44-80	7.0-20	---	6.6-8.4	0-20
132A:					
Starks	0-10	12-22	---	5.1-7.3	0
	10-14	10-18	---	5.1-7.3	0
	14-31	16-23	---	5.1-6.5	0
	31-43	6.0-19	---	5.6-7.8	0-5
	43-60	3.0-19	---	6.1-8.4	0-10
146A:					
Elliott	0-6	16-32	---	5.6-7.3	0
	6-11	27-40	---	5.6-7.3	0
	11-16	17-38	---	6.1-7.3	0
	16-41	13-24	---	6.6-7.8	0-15
	41-60	11-22	---	7.4-8.4	10-35
146B:					
Elliott	0-9	16-32	---	5.6-7.3	0
	9-13	27-40	---	5.6-7.3	0
	13-17	15-36	---	6.1-7.3	0
	17-35	13-24	---	6.6-7.8	0-15
	35-60	11-22	---	7.4-8.4	10-35
148A:					
Proctor	0-11	17-24	---	5.1-7.8	0
	11-31	16-25	---	5.6-7.3	0
	31-38	11-21	---	5.6-7.3	0
	38-60	3.0-13	---	5.6-7.8	0-10
148B:					
Proctor	0-11	17-24	---	5.1-7.8	0
	11-28	16-25	---	5.6-7.3	0
	28-33	11-21	---	5.6-7.3	0
	33-60	3.0-13	---	5.6-7.8	0-10
149A:					
Brenton	0-12	18-26	---	5.6-7.3	0
	12-28	15-23	---	5.6-7.3	0
	28-44	12-19	---	5.6-7.8	0-5
	44-60	3.0-19	---	6.6-8.4	0-20

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
151A:					
Ridgeville-----------	0-16	10-17	---	5.6-7.3	0
	16-40	7.0-13	---	5.6-6.5	0
	40-60	2.0-7.0	---	6.1-7.3	0
152A:					
Drummer--------------	0-14	24-35	---	5.6-7.8	0
	14-42	13-25	---	5.6-7.8	0
	42-50	9.0-21	---	6.1-8.4	0-20
	50-60	6.0-20	---	6.6-8.4	0-40
184A:					
Roby-----------------	0-6	7.0-13	---	4.5-7.3	0
	6-15	2.0-10	---	4.5-6.0	0
	15-32	7.0-12	---	4.5-6.0	0
	32-60	2.0-10	---	5.6-8.4	0-15
189A:					
Martinton------------	0-12	18-24	---	5.6-7.3	0
	12-39	18-24	---	5.6-7.8	0-10
	39-60	7.0-22	---	7.4-8.4	5-30
189B:					
Martinton------------	0-10	18-24	---	5.6-7.3	0
	10-34	18-24	---	5.6-7.8	0-10
	34-60	7.0-22	---	7.4-8.4	5-30
201A:					
Gilford--------------	0-22	12-21	---	5.6-7.3	0
	22-41	5.0-14	---	5.6-7.3	0
	41-60	1.0-6.0	---	6.6-8.4	0-30
223B:					
Varna----------------	0-12	15-22	---	5.6-7.3	0
	12-30	18-28	---	5.6-7.3	0
	30-48	15-25	---	7.4-8.4	0-15
	48-60	13-21	---	7.9-8.4	5-30
223B2:					
Varna----------------	0-7	14-20	---	5.6-7.3	0
	7-26	18-28	---	5.6-7.3	0
	26-38	15-25	---	7.4-8.4	0-15
	38-60	13-21	---	7.9-8.4	5-30
223C2:					
Varna----------------	0-9	14-20	---	5.6-7.3	0
	9-29	18-28	---	5.6-7.3	0
	29-50	15-25	---	7.4-8.4	0-15
	50-60	13-21	---	7.9-8.4	5-30
223C3:					
Varna----------------	0-6	14-22	---	5.6-7.3	0
	6-16	18-28	---	5.6-7.3	0
	16-19	15-25	---	7.4-8.4	0-15
	19-60	13-21	---	7.9-8.4	5-30
228A:					
Nappanee-------------	0-5	12-20	---	5.1-7.3	0
	5-8	9.0-16	---	5.1-7.3	0
	8-26	23-32	---	5.6-7.8	0
	26-48	20-29	---	7.4-8.4	10-30
	48-75	15-24	---	7.9-8.4	15-35

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
228B:					
Nappanee	0-4	12-20	---	5.1-7.3	0
	4-9	9.0-16	---	5.1-7.3	0
	9-23	23-32	---	5.6-7.8	0
	23-46	20-29	---	7.4-8.4	10-30
	46-60	15-24	---	7.9-8.4	15-35
232A:					
Ashkum	0-12	22-38	---	5.6-7.3	0
	12-29	22-39	---	6.1-7.8	0-5
	29-54	13-24	---	6.6-7.8	0-15
	54-60	11-22	---	7.4-8.4	10-25
235A:					
Bryce	0-13	30-42	---	5.6-7.8	0
	13-45	23-33	---	6.1-7.8	0-5
	45-58	21-33	---	7.4-8.4	0-15
	58-66	12-34	---	7.4-8.4	10-25
241D3:					
Chatsworth	0-2	21-32	---	6.1-8.4	0-20
	2-22	18-31	---	6.6-8.4	0-25
	22-60	17-26	---	7.4-8.4	5-30
241E3:					
Chatsworth	0-7	21-32	---	6.1-8.4	0-20
	7-21	18-31	---	6.6-8.4	0-25
	21-60	17-26	---	7.4-8.4	5-30
241F:					
Chatsworth	0-4	15-24	---	6.1-8.4	0-15
	4-24	18-31	---	6.6-8.4	0-25
	24-60	17-26	---	7.4-8.4	5-30
241G:					
Chatsworth	0-5	15-24	---	6.1-8.4	0-15
	5-20	18-31	---	6.6-8.4	0-25
	20-60	17-26	---	7.4-8.4	5-30
290B:					
Warsaw	0-11	15-25	---	5.6-7.3	0
	11-29	11-22	---	5.1-7.3	0
	29-60	1.0-7.0	---	7.4-8.4	15-35
290C2:					
Warsaw	0-8	13-21	---	5.6-7.3	0
	8-16	11-22	---	5.1-6.5	0
	16-27	9.0-22	---	6.1-8.4	0-10
	27-60	1.0-7.0	---	7.4-8.4	10-30
293A:					
Andres	0-11	10-22	---	5.6-7.3	0
	11-36	11-22	---	6.1-7.8	0-5
	36-50	13-24	---	6.6-8.4	0-15
	50-60	11-22	---	7.4-8.4	15-30
294A:					
Symerton	0-12	10-22	---	5.6-7.3	0
	12-18	14-25	---	5.6-7.3	0
	18-41	8.0-22	---	5.6-7.8	0-5
	41-50	9.0-23	---	7.4-8.4	0-15
	50-60	9.0-23	---	7.4-8.4	5-30

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
294B:					
Symerton	0-15	10-22	---	5.6-7.3	0
	15-19	15-27	---	5.6-7.3	0
	19-35	8.0-22	---	5.6-7.8	0-5
	35-39	9.0-23	---	7.4-8.4	0-15
	39-60	9.0-23	---	7.4-8.4	5-30
294C2:					
Symerton	0-8	9.0-20	---	5.6-7.3	0
	8-31	8.0-22	---	5.6-7.8	0-5
	31-40	9.0-23	---	7.4-8.4	0-15
	40-60	9.0-23	---	7.4-8.4	5-30
298A:					
Beecher	0-9	17-24	---	5.1-7.3	0
	9-21	15-33	---	4.5-7.3	0
	21-37	13-24	---	6.1-7.8	0-15
	37-60	11-22	---	7.4-8.4	10-35
298B:					
Beecher	0-7	17-24	---	5.1-7.3	0
	7-24	15-33	---	4.5-7.3	0
	24-36	13-24	---	6.1-7.8	0-15
	36-60	11-22	---	7.4-8.4	10-35
315A:					
Channahon	0-8	16-24	---	6.1-7.8	0
	8-16	15-24	---	6.1-8.4	0-20
	16-60	---	---	---	---
315B:					
Channahon	0-11	16-24	---	6.1-7.8	0
	11-18	15-24	---	6.1-8.4	0-20
	18-60	---	---	---	---
315C2:					
Channahon	0-6	16-22	---	6.1-7.8	0
	6-13	15-24	---	6.1-8.4	0-20
	13-60	---	---	---	---
318B:					
Lorenzo	0-9	13-22	---	5.6-7.3	0
	9-18	10-20	---	5.6-7.8	0-20
	18-60	0.0-4.0	---	7.4-8.4	15-40
329A:					
Will	0-16	22-28	---	5.6-7.3	0
	16-24	14-24	---	6.1-8.4	0-20
	24-60	0.0-5.0	---	7.4-8.4	15-35
330A:					
Peotone	0-13	30-38	---	5.6-7.8	0
	13-50	22-33	---	6.1-7.8	0
	50-60	15-26	---	6.6-8.4	0-15
343A:					
Kane	0-11	17-26	---	5.6-7.3	0
	11-26	16-24	---	5.6-7.3	0
	26-34	12-20	---	6.1-7.8	0-15
	34-60	0.0-7.0	---	7.9-8.4	15-40

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
354B:					
Hononegah	0-18	4.0-12	---	5.6-7.8	0
	18-32	3.0-10	---	5.6-7.8	0
	32-60	1.0-5.0	---	7.4-8.4	10-40
354D:					
Hononegah	0-14	4.0-12	---	5.6-7.8	0
	14-38	3.0-10	---	5.6-7.8	0
	38-60	1.0-5.0	---	7.4-8.4	10-40
356A:					
Elpaso	0-21	26-35	---	5.6-7.3	0
	21-44	14-25	---	6.1-7.8	0-5
	44-69	12-25	---	6.6-7.8	0-15
	69-80	9.0-20	---	7.4-8.4	5-30
494B:					
Kankakee	0-11	10-20	---	5.6-7.3	0
	11-14	11-23	---	5.6-7.8	0
	14-21	6.0-16	---	6.1-7.8	0-10
	21-60	3.0-13	---	7.4-8.4	0-20
503A:					
Rockton	0-17	16-25	---	5.6-7.3	0
	17-28	17-24	---	5.6-7.8	0
	28-34	20-38	---	5.6-7.8	0-5
	34-60	---	---	---	---
503B:					
Rockton	0-11	16-25	---	5.6-7.3	0
	11-27	17-24	---	5.6-7.8	0
	27-31	20-38	---	5.6-7.8	0-5
	31-60	---	---	---	---
513A:					
Granby	0-8	6.0-20	---	5.6-7.3	0
	8-17	1.0-12	---	5.6-7.3	0
	17-30	0.0-11	---	5.6-7.8	0
	30-80	0.0-7.0	---	6.1-8.4	0-10
516A:					
Faxon	0-5	18-27	---	6.6-7.8	0
	5-13	17-27	---	6.6-7.8	0
	13-25	15-24	---	6.6-7.8	0-5
	25-60	---	---	---	---
530B:					
Ozaukee	0-4	9.0-20	---	6.1-7.3	0
	4-10	7.0-16	---	6.1-7.3	0
	10-21	20-26	---	6.1-7.3	0
	21-39	15-22	---	7.4-8.4	0-20
	39-60	13-19	---	7.9-8.4	10-40
530C2:					
Ozaukee	0-6	9.0-18	---	6.1-7.3	0
	6-21	20-26	---	6.1-7.3	0
	21-28	15-22	---	7.4-8.4	0-20
	28-60	13-19	---	7.9-8.4	10-40

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
530C3:					
Ozaukee	0-9	14-22	---	6.1-7.3	0
	9-21	20-26	---	6.1-7.3	0
	21-27	15-22	---	7.4-8.4	0-20
	27-60	13-19	---	7.9-8.4	10-40
530D2:					
Ozaukee	0-6	9.0-18	---	6.1-7.3	0
	6-20	20-26	---	6.1-7.3	0
	20-28	15-22	---	7.4-8.4	0-20
	28-60	13-19	---	7.9-8.4	10-40
530D3:					
Ozaukee	0-9	14-22	---	6.1-7.3	0
	9-21	20-26	---	6.1-7.3	0
	21-25	15-22	---	7.4-8.4	0-20
	25-60	13-19	---	7.9-8.4	10-40
530E2:					
Ozaukee	0-6	9.0-18	---	6.1-7.3	0
	6-27	20-26	---	6.1-7.3	0
	27-31	15-22	---	7.4-8.4	0-20
	31-60	13-19	---	7.9-8.4	10-40
530F:					
Ozaukee	0-5	9.0-20	---	6.1-7.3	0
	5-29	20-26	---	6.1-7.3	0
	29-36	15-22	---	7.4-8.4	0-20
	36-60	13-19	---	7.9-8.4	10-40
536.					
Dumps					
541B:					
Graymont	0-12	19-26	---	6.1-7.3	0
	12-33	15-25	---	5.6-7.3	0
	33-38	12-23	---	6.6-7.8	0-10
	38-60	13-20	---	7.4-8.4	5-30
541C2:					
Graymont	0-9	19-24	---	6.1-7.3	0
	9-30	15-25	---	5.6-7.3	0
	30-38	12-23	---	6.6-7.8	0-10
	38-60	13-20	---	7.4-8.4	5-30
553A:					
Bryce	0-17	30-42	---	5.6-7.8	0
	17-36	23-33	---	6.1-7.8	0-10
	36-43	21-33	---	6.6-8.4	0-20
	43-60	---	---	---	---
Calamine	0-12	30-42	---	6.1-7.8	0
	12-29	23-33	---	6.1-7.8	0-10
	29-33	21-33	---	6.6-8.4	0-20
	33-60	---	---	---	---
555A:					
Shadeland	0-9	14-24	---	5.1-7.3	0
	9-13	9.0-17	---	5.1-7.3	0
	13-23	12-22	---	4.5-6.0	0
	23-36	11-21	---	4.5-6.0	0
	36-60	---	---	---	---

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
556B:					
High Gap-------------	0-9	14-24	---	5.1-7.3	0
	9-28	12-22	---	4.5-6.5	0
	28-36	9.0-19	---	5.1-6.5	0
	36-60	---	---	---	---
570B:					
Martinsville---------	0-7	7.0-16	---	5.1-7.3	0
	7-13	4.0-13	---	5.1-7.3	0
	13-48	10-19	---	5.1-7.3	0
	48-63	7.0-14	---	5.1-7.3	0
	63-80	2.0-11	---	5.6-7.8	0-25
570C2:					
Martinsville---------	0-6	7.0-14	---	5.1-7.3	0
	6-9	4.0-13	---	5.1-7.3	0
	9-35	10-19	---	5.1-7.3	0
	35-54	7.0-14	---	5.1-7.3	0
	54-80	2.0-11	---	5.6-7.8	0-25
570D2:					
Martinsville---------	0-5	7.0-14	---	5.1-7.3	0
	5-13	4.0-13	---	5.1-7.3	0
	13-35	10-19	---	5.1-7.3	0
	35-55	7.0-14	---	5.1-7.3	0
	55-80	2.0-11	---	5.6-7.8	0-25
594A:					
Reddick--------------	0-13	24-33	---	6.1-7.8	0
	13-32	14-25	---	6.1-7.8	0
	32-47	15-27	---	6.6-8.4	15-30
	47-60	18-29	---	7.4-8.4	0-15
614A:					
Chenoa---------------	0-12	27-40	---	6.1-7.3	0
	12-32	22-35	---	5.6-7.3	0
	32-36	13-24	---	6.6-8.4	0-15
	36-60	11-22	---	7.4-8.4	15-30
672A:					
Cresent--------------	0-15	8.0-22	---	5.6-7.3	0
	15-46	8.0-20	---	5.1-7.3	0
	46-60	1.0-6.0	---	6.1-7.8	0-10
672B:					
Cresent--------------	0-7	8.0-22	---	5.6-7.3	0
	7-11	4.0-15	---	5.1-7.3	0
	11-41	8.0-20	---	5.1-7.3	0
	41-60	1.0-6.0	---	6.1-7.8	0-10
688B:					
Braidwood------------	0-9	4.0-8.0	---	7.4-8.4	0-25
	9-22	3.0-6.0	---	7.4-8.4	5-35
	22-42	1.0-5.0	---	7.4-8.4	5-35
	42-64	0.0-5.0	---	7.4-8.4	5-35
688D:					
Braidwood------------	0-8	4.0-8.0	---	7.4-8.4	0-25
	8-16	3.0-6.0	---	7.4-8.4	5-35
	16-42	1.0-5.0	---	7.4-8.4	5-35
	42-65	0.0-5.0	---	7.4-8.4	5-35

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
688G:					
Braidwood------------	0-6	4.0-8.0	---	7.4-8.4	0-25
	6-15	3.0-6.0	---	7.4-8.4	5-35
	15-37	1.0-5.0	---	7.4-8.4	5-35
	37-65	0.0-5.0	---	7.4-8.4	5-35
740A:					
Darroch--------------	0-15	12-24	---	5.6-7.3	0
	15-21	11-24	---	5.6-7.3	0
	21-29	11-23	---	5.6-7.3	0
	29-60	3.0-13	---	7.4-8.4	10-40
741B:					
Oakville-------------	0-7	1.0-4.0	---	4.5-7.3	0
	7-40	0.0-2.0	---	4.5-7.3	0
	40-60	0.0-2.0	---	4.5-7.3	0
741D:					
Oakville-------------	0-6	1.0-4.0	---	4.5-7.3	0
	6-30	0.0-2.0	---	4.5-7.3	0
	30-60	0.0-2.0	---	4.5-7.3	0
802B:					
Orthents, loamy------	0-6	10-25	---	5.6-7.8	0-10
	6-60	10-20	---	5.6-8.4	0-20
802D:					
Orthents, loamy------	0-6	10-25	---	5.6-7.8	0-10
	6-60	10-20	---	5.6-8.4	0-20
817A:					
Channahon------------	0-11	7.0-17	---	6.1-7.3	0
	11-16	6.0-13	---	6.1-7.3	0
	16-19	1.0-6.0	---	6.1-7.3	0
	19-60	---	---	---	---
Hesch----------------	0-12	7.0-17	---	5.1-7.3	0
	12-27	6.0-13	---	5.1-7.3	0
	27-32	1.0-6.0	---	5.1-7.3	0
	32-60	---	---	---	---
817B:					
Channahon------------	0-7	7.0-17	---	6.1-7.3	0
	7-15	6.0-13	---	6.1-7.3	0
	15-60	---	---	---	---
Hesch----------------	0-11	7.0-17	---	5.1-7.3	0
	11-23	6.0-13	---	5.1-7.3	0
	23-60	---	---	---	---
830.					
Landfills					
863.					
Pits, clay					
865.					
Pits, gravel					

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
871D:					
Lenzburg	0-5	17-29	---	6.6-8.4	0-20
	5-37	12-23	---	6.6-8.4	0-25
	37-80	12-23	---	7.4-8.4	0-25
871G:					
Lenzburg	0-5	17-29	---	6.6-8.4	0-20
	5-37	12-23	---	6.6-8.4	0-25
	37-80	12-23	---	7.4-8.4	0-25
1107A:					
Sawmill	0-28	23-35	---	6.1-7.3	0
	28-42	18-30	---	6.6-7.8	0-5
	42-60	15-27	---	6.6-8.4	0-20
3073A:					
Ross	0-23	14-26	---	6.1-7.8	0
	23-54	12-24	---	6.1-7.8	0-10
	54-60	5.0-15	---	6.1-8.4	0-20
3107A:					
Sawmill	0-29	23-35	---	6.1-7.3	0
	29-48	18-30	---	6.6-7.8	0-5
	48-60	15-27	---	6.6-8.4	0-20
3451A:					
Lawson	0-14	15-28	---	6.1-7.8	0
	14-33	13-29	---	6.1-7.8	0
	33-80	11-23	---	6.1-7.8	0
3776A:					
Comfrey	0-7	20-30	---	6.1-7.8	0
	7-26	12-29	---	6.1-7.8	0
	26-63	10-25	---	6.6-8.4	0-20
4107A:					
Sawmill	0-5	23-46	---	6.1-7.8	0
	5-25	23-35	---	6.1-7.3	0
	25-43	18-30	---	6.6-7.8	0-5
	43-60	15-27	---	6.6-8.4	0-20
4516A:					
Faxon	0-5	24-45	---	6.6-7.8	0
	5-13	16-27	---	6.6-7.8	0
	13-25	14-24	---	6.6-7.8	0-5
	25-60	---	---	---	---
4904A:					
Muskego	0-5	140-180	---	5.6-7.3	0
	5-36	150-190	---	5.6-7.8	0
	36-80	10-45	---	6.6-8.4	0-60
Peotone	0-24	30-38	---	5.6-7.8	0
	24-53	22-33	---	6.1-7.8	0
	53-60	15-26	---	6.6-8.4	0-15
8073A:					
Ross	0-32	14-26	---	6.1-7.8	0
	32-50	12-24	---	6.1-7.8	0-10
	50-60	5.0-15	---	6.1-8.4	0-20

Table 23.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbon-ate
	In	meq/100 g	meq/100 g	pH	Pct
8107A:					
Sawmill--------------	0-26	23-36	---	6.1-7.8	0
	26-53	18-34	---	6.1-7.8	0-5
	53-60	18-34	---	6.1-8.4	0-30
8404A:					
Titus----------------	0-13	25-32	---	6.1-7.3	0
	13-68	21-29	---	6.1-7.8	0
	68-80	12-19	---	6.1-7.8	0-5
8451A:					
Lawson---------------	0-13	13-28	---	6.1-7.8	0
	13-53	13-29	---	6.1-7.8	0
	53-80	11-23	---	6.1-7.8	0
8776A:					
Comfrey--------------	0-8	20-30	---	6.1-7.8	0
	8-29	12-29	---	6.1-7.8	0
	29-65	10-25	---	6.6-8.4	0-20

Table 24.--Water Features

(See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
23A:										
Blount----------------	C	---	---	None	---	None	Jan-May	0.5-2.0	2.5-5.5	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
23B:										
Blount----------------	C	---	---	None	---	None	Jan-May	0.5-2.0	2.5-5.5	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
42A:										
Papineau--------------	C	---	---	None	---	None	Jan-May	1.0-2.0	3.0-4.5	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
49A:										
Watseka---------------	A	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
69A:										
Milford---------------	C/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
88B:										
Sparta----------------	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
91A:										
Swygert---------------	C	---	---	None	---	None	Jan-May	1.0-2.0	2.9-5.1	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
91B:										
Swygert---------------	C	---	---	None	---	None	Jan-May	1.0-2.0	2.9-5.1	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
91B2:										
Swygert---------------	C	---	---	None	---	None	Jan-May	1.0-2.0	2.9-5.1	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
91C2:										
Swygert---------------	C	---	---	None	---	None	Jan-May	1.0-2.0	2.9-5.1	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
93C2:										
Rodman----------------	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
98B:										
Ade-------------------	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
125A:										
Selma-----------------	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
132A:										
Starks----------------	B	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
146A:										
Elliott---------------	C	---	---	None	---	None	Jan-May	1.0-2.0	1.7-4.3	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
146B:										
Elliott---------------	C	---	---	None	---	None	Jan-May	1.0-2.0	1.7-4.3	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
148A:										
Proctor---------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
148B:										
Proctor---------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
149A:										
Brenton---------------	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
151A:										
Ridgeville------------	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
152A:										
Drummer---------------	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
184A:										
Roby------------------	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
189A:										
Martinton-------------	C	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
189B:										
Martinton-------------	C	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
201A:										
Gilford---------------	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
223B:										
Varna-----------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-5.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
223B2:										
Varna-----------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-5.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
223C2:										
Varna-----------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-5.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
223C3:										
Varna-----------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-5.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
228A:										
Nappanee--------------	D	---	---	None	---	None	Jan-May	0.5-2.0	2.0-5.5	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
228B:										
Nappanee	D	---	---	None	---	None	Jan-May	0.5-2.0	2.0-5.5	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
232A:										
Ashkum	C/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
235A:										
Bryce	D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
241D3:										
Chatsworth	D	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-4.0	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
241E3:										
Chatsworth	D	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-4.0	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
241F:										
Chatsworth	D	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-4.0	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
241G:										
Chatsworth	D	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-4.0	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
290B:										
Warsaw	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
290C2:										
Warsaw	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
293A:										
Andres	C	---	---	None	---	None	Jan-May	1.0-2.0	3.0-5.5	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
294A:										
Symerton	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.5-4.7	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
294B:										
Symerton	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.5-4.7	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
294C2:										
Symerton	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.5-4.7	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
298A:										
Beecher	C	---	---	None	---	None	Jan-May	0.5-2.0	2.0-4.3	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
298B:										
Beecher	C	---	---	None	---	None	Jan-May	0.5-2.0	2.0-4.3	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
315A:										
Channahon	D	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
315B:										
Channahon	D	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
315C2:										
Channahon	D	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
318B:										
Lorenzo	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
329A:										
Will	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
330A:										
Peotone	C/D	0.0-0.5	Brief	Frequent	---	None	Jan-Jun	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jul-Dec	>6.0	>6.0	---
343A:										
Kane	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
354B:										
Hononegah	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
354D:										
Hononegah	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
356A:										
Elpaso	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
494B:										
Kankakee	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
503A:										
Rockton	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
503B:										
Rockton	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
513A:										
Granby	A/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
516A:										
Faxon	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	1.7-3.3	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
530B:										
Ozaukee	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-4.3	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
530C2:										
Ozaukee---------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-4.3	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
530C3:										
Ozaukee---------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-4.3	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
530D2:										
Ozaukee---------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-4.3	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
530D3:										
Ozaukee---------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-4.3	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
530E2:										
Ozaukee---------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-4.3	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
530F:										
Ozaukee---------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-4.3	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
536.										
Dumps										
541B:										
Graymont--------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-4.3	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
541C2:										
Graymont--------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.2-4.3	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
553A:										
Bryce-----------------	D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
Calamine--------------	D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
555A:										
Shadeland-------------	C	---	---	None	---	None	Jan-May	0.5-2.0	1.7-3.8	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
556B:										
High Gap--------------	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	3.5-5.0	3.7-5.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
570B:										
Martinsville----------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
570C2:										
Martinsville----------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
570D2:										
Martinsville----------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
594A:										
Reddick---------------	C/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
614A:										
Chenoa----------------	C	---	---	None	---	None	Jan-May	1.0-2.0	2.1-4.3	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
672A:										
Cresent---------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
672B:										
Cresent---------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
688B:										
Braidwood-------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
688D:										
Braidwood-------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
688G:										
Braidwood-------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
740A:										
Darroch---------------	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
741B:										
Oakville--------------	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
741D:										
Oakville--------------	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
802B:										
Orthents, loamy-------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	3.5-5.0	3.7-5.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
802D:										
Orthents, loamy-------	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	3.5-5.0	3.7-5.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
817A:										
Channahon-------------	D	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Hesch-----------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
817B:										
Channahon-------------	D	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Hesch-----------------	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
830.										
Landfills										

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
863. Pits, clay										
865. Pits, gravel										
871D: Lenzburg	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
871G: Lenzburg	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
1107A: Sawmill	B/D	0.0-0.5	Long	Frequent	Brief	Frequent	Jan-Jun	0.0-0.5	>6.0	Apparent
		---	---	---	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	---	---	---	Nov-Dec	0.0-0.5	>6.0	Apparent
3073A: Ross	B	---	---	None	Brief	Frequent	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
3107A: Sawmill	B/D	0.0-0.5	Brief	Frequent	Brief	Frequent	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
3451A: Lawson	B	---	---	None	Brief	Frequent	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
3776A: Comfrey	B/D	0.0-0.5	Brief	Frequent	Brief	Frequent	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
4107A: Sawmill	B/D	0.0-1.0	Very long	Frequent	Long	Frequent	Jan-Dec	0.0-0.5	>6.0	Apparent
4516A: Faxon	B/D	0.0-1.0	Very long	Frequent	---	None	Jan-Dec	0.0-0.5	1.7-3.3	Perched
4904A: Muskego	A/D	0.0-1.0	Very long	Frequent	---	None	Jan-Dec	0.0-0.5	>6.0	Apparent
Peotone	C/D	0.0-1.0	Very long	Frequent	---	None	Jan-Dec	0.0-0.5	>6.0	Apparent
8073A: Ross	B	---	---	None	Brief	Occasional	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
8107A: Sawmill	B/D	0.0-0.5	Brief	Frequent	Brief	Occasional	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
8404A: Titus	C/D	0.0-0.5	Brief	Frequent	Brief	Occasional	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
8451A: Lawson	B	---	---	None	Brief	Occasional	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---

Table 24.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
8776A:										
Comfrey---------------	B/D	0.0-0.5	Brief	Frequent	Brief	Occasional	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---

Table 25.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
23A:								
Blount	Dense material	30-48	Noncemented	---	---	High	High	High
23B:								
Blount	Dense material	30-48	Noncemented	---	---	High	High	Low
42A:								
Papineau	Dense material	36-48	Noncemented	---	---	Moderate	High	Moderate
49A:								
Watseka	---	---	---	---	---	Low	Low	High
69A:								
Milford	---	---	---	---	---	High	High	Low
88B:								
Sparta	---	---	---	---	---	Low	Low	High
91A:								
Swygert	Dense material	35-55	Noncemented	---	---	Moderate	High	Low
91B:								
Swygert	Dense material	35-55	Noncemented	---	---	Moderate	High	Low
91B2:								
Swygert	Dense material	35-55	Noncemented	---	---	Moderate	High	Low
91C2:								
Swygert	Dense material	35-55	Noncemented	---	---	Moderate	High	Low
93C2:								
Rodman	---	---	---	---	---	Low	Low	Low
98B:								
Ade	---	---	---	---	---	Low	Low	High
125A:								
Selma	---	---	---	---	---	High	High	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
132A:								
Starks	---	---	---	---	---	High	High	Moderate
146A:								
Elliott	Dense material	20-45	Noncemented	---	---	Moderate	High	Low
146B:								
Elliott	Dense material	20-45	Noncemented	---	---	Moderate	High	Low
148A:								
Proctor	---	---	---	---	---	High	Moderate	Moderate
148B:								
Proctor	---	---	---	---	---	High	Moderate	Moderate
149A:								
Brenton	---	---	---	---	---	High	High	Moderate
151A:								
Ridgeville	---	---	---	---	---	Moderate	Moderate	Moderate
152A:								
Drummer	---	---	---	---	---	High	High	Moderate
184A:								
Roby	---	---	---	---	---	High	Moderate	High
189A:								
Martinton	---	---	---	---	---	Moderate	High	Moderate
189B:								
Martinton	---	---	---	---	---	Moderate	High	Moderate
201A:								
Gilford	---	---	---	---	---	High	High	Moderate
223B:								
Varna	Dense material	24-60	Noncemented	---	---	Moderate	High	Moderate
223B2:								
Varna	Dense material	24-60	Noncemented	---	---	Moderate	High	Moderate
223C2:								
Varna	Dense material	24-60	Noncemented	---	---	Moderate	High	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
223C3:								
Varna	Dense material	18-36	Noncemented	---	---	Moderate	High	Low
228A:								
Nappanee	Dense material	24-60	Noncemented	---	---	High	High	Moderate
228B:								
Nappanee	Dense material	24-60	Noncemented	---	---	High	High	Low
232A:								
Ashkum	---	---	---	---	---	High	High	Low
235A:								
Bryce	---	---	---	---	---	High	High	Low
241D3:								
Chatsworth	Dense material	10-24	Noncemented	---	---	Moderate	High	Low
241E3:								
Chatsworth	Dense material	10-24	Noncemented	---	---	Moderate	High	Low
241F:								
Chatsworth	Dense material	10-24	Noncemented	---	---	Moderate	High	Low
241G:								
Chatsworth	Dense material	10-24	Noncemented	---	---	Moderate	High	Low
290B:								
Warsaw	---	---	---	---	---	Moderate	Moderate	Moderate
290C2:								
Warsaw	---	---	---	---	---	Moderate	Moderate	Low
293A:								
Andres	---	---	---	---	---	Moderate	High	Low
294A:								
Symerton	---	---	---	---	---	Moderate	High	Moderate
294B:								
Symerton	---	---	---	---	---	Moderate	High	Moderate
294C2:								
Symerton	---	---	---	---	---	Moderate	High	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
298A:								
Beecher	Dense material	24-45	Noncemented	---	---	High	High	Low
298B:								
Beecher	Dense material	24-45	Noncemented	---	---	High	High	Low
315A:								
Channahon	Bedrock (lithic)	10-20	Indurated	---	---	Moderate	Moderate	Low
315B:								
Channahon	Bedrock (lithic)	10-20	Indurated	---	---	Moderate	Moderate	Low
315C2:								
Channahon	Bedrock (lithic)	10-20	Indurated	---	---	Moderate	Moderate	Low
318B:								
Lorenzo	---	---	---	---	---	Moderate	Moderate	Moderate
329A:								
Will	---	---	---	---	---	High	High	Moderate
330A:								
Peotone	---	---	---	---	---	High	High	Low
343A:								
Kane	---	---	---	---	---	Moderate	High	Moderate
354B:								
Hononegah	---	---	---	---	---	Low	Low	Moderate
354D:								
Hononegah	---	---	---	---	---	Low	Low	Moderate
356A:								
Elpaso	---	---	---	---	---	High	High	Low
494B:								
Kankakee	---	---	---	---	---	Moderate	Moderate	Moderate
503A:								
Rockton	Bedrock (lithic)	20-40	Indurated	---	---	Moderate	Moderate	Moderate
503B:								
Rockton	Bedrock (lithic)	20-40	Indurated	---	---	Moderate	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
513A:								
Granby	---	---	---	---	---	Moderate	High	Moderate
516A:								
Faxon	Bedrock (lithic)	20-40	Indurated	---	---	High	High	Low
530B:								
Ozaukee	Dense material	20-45	Noncemented	---	---	Moderate	High	Low
530C2:								
Ozaukee	Dense material	20-45	Noncemented	---	---	Moderate	High	Low
530C3:								
Ozaukee	Dense material	20-45	Noncemented	---	---	Moderate	High	Low
530D2:								
Ozaukee	Dense material	20-45	Noncemented	---	---	Moderate	High	Low
530D3:								
Ozaukee	Dense material	20-45	Noncemented	---	---	Moderate	High	Low
530E2:								
Ozaukee	Dense material	20-45	Noncemented	---	---	Moderate	High	Low
530F:								
Ozaukee	Dense material	20-45	Noncemented	---	---	Moderate	High	Low
536.								
Dumps								
541B:								
Graymont	---	---	---	---	---	High	High	Moderate
541C2:								
Graymont	---	---	---	---	---	High	High	Moderate
553A:								
Bryce	Bedrock (paralithic)	40-60	Moderately cemented	---	---	High	High	Low
Calamine	Bedrock (paralithic)	20-40	Moderately cemented	---	---	High	High	Low
555A:								
Shadeland	Bedrock (paralithic)	20-40	Moderately cemented	---	---	High	High	High

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
556B:								
High Gap	Bedrock (paralithic)	20-40	Moderately cemented	---	---	Moderate	Moderate	High
570B:								
Martinsville	---	---	---	---	---	Moderate	Moderate	Moderate
570C2:								
Martinsville	---	---	---	---	---	Moderate	Moderate	Moderate
570D2:								
Martinsville	---	---	---	---	---	Moderate	Moderate	Moderate
594A:								
Reddick	---	---	---	---	---	High	High	Low
614A:								
Chenoa	---	---	---	---	---	Moderate	High	Moderate
672A:								
Cresent	---	---	---	---	---	Moderate	Moderate	Moderate
672B:								
Cresent	---	---	---	---	---	Moderate	Moderate	Moderate
688B:								
Braidwood	---	---	---	---	---	Moderate	Low	Low
688D:								
Braidwood	---	---	---	---	---	Moderate	Low	Low
688G:								
Braidwood	---	---	---	---	---	Moderate	Low	Low
740A:								
Darroch	---	---	---	---	---	Moderate	High	Moderate
741B:								
Oakville	---	---	---	---	---	Low	Low	High
741D:								
Oakville	---	---	---	---	---	Low	Low	High
802B, 802D:								
Orthents, loamy	---	---	---	---	---	Moderate	Moderate	Moderate

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In		In	In			
817A:								
Channahon	Bedrock (paralithic)	10-20	Moderately cemented	---	---	Moderate	Low	Moderate
Hesch	Bedrock (paralithic)	20-40	Moderately cemented	---	---	Moderate	Low	High
817B:								
Channahon	Bedrock (paralithic)	10-20	Moderately cemented	---	---	Moderate	Low	Moderate
Hesch	Bedrock (paralithic)	20-40	Moderately cemented	---	---	Moderate	Low	Moderate
830. Landfills								
863. Pits, clay								
865. Pits, gravel								
871D:								
Lenzburg	---	---	---	---	---	Moderate	Moderate	Low
871G:								
Lenzburg	---	---	---	---	---	Moderate	Moderate	Low
1107A:								
Sawmill	---	---	---	---	---	High	High	Low
3073A:								
Ross	---	---	---	---	---	Moderate	Low	Low
3107A:								
Sawmill	---	---	---	---	---	High	High	Low
3451A:								
Lawson	---	---	---	---	---	High	High	Low
3776A:								
Comfrey	---	---	---	---	---	High	High	Low

Table 25.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
4107A:								
Sawmill	---	---	---	---	---	High	Moderate	Low
4516A:								
Faxon	Bedrock (lithic)	20-40	Indurated	---	---	High	Moderate	Low
4904A:								
Muskego	---	---	---	---	35-45	High	Moderate	Moderate
Peotone	---	---	---	---	---	High	High	Low
8073A:								
Ross	---	---	---	---	---	Moderate	Low	Low
8107A:								
Sawmill	---	---	---	---	---	High	High	Low
8404A:								
Titus	---	---	---	---	---	High	High	Low
8451A:								
Lawson	---	---	---	---	---	High	High	Low
8776A:								
Comfrey	---	---	---	---	---	High	High	Low

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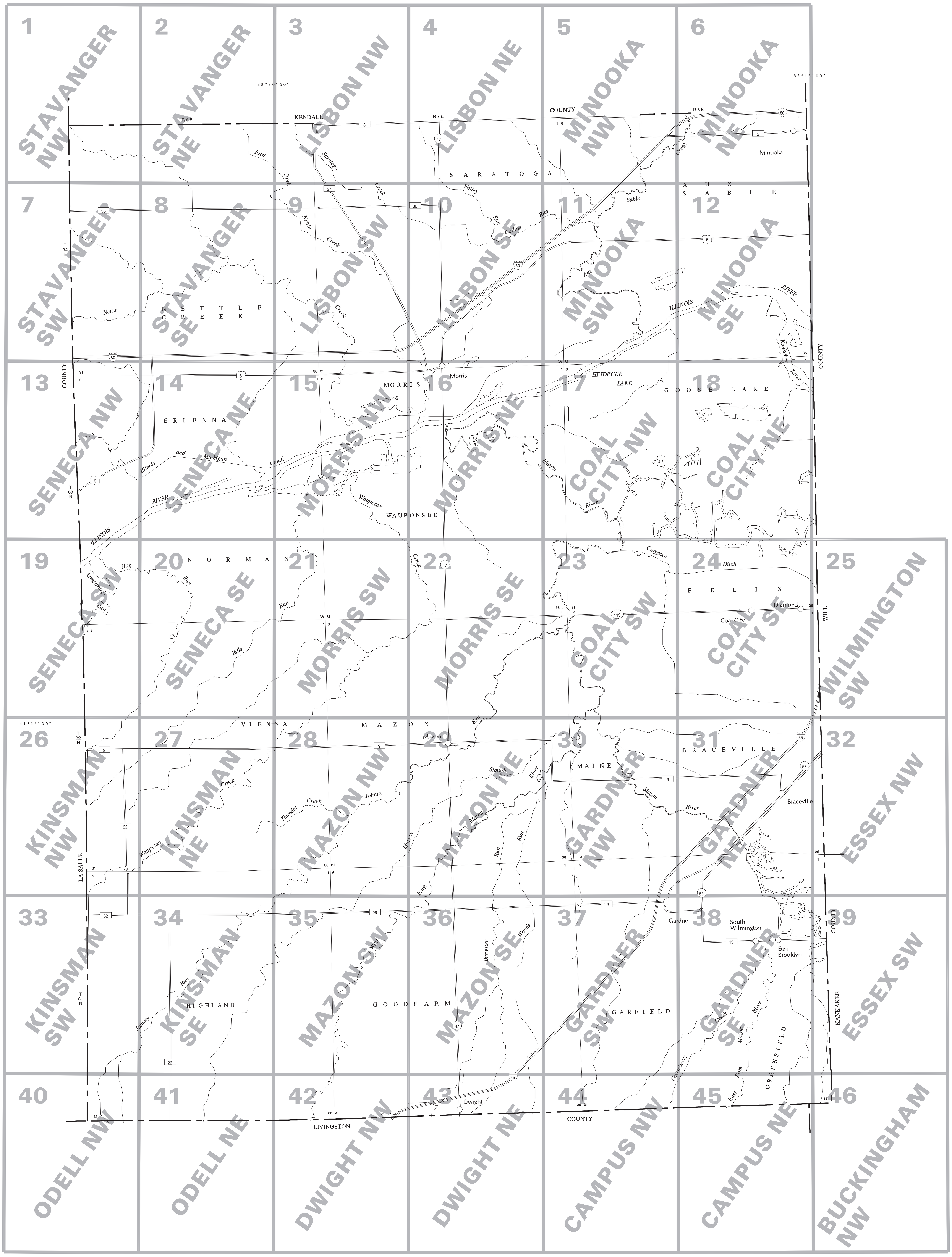

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

INDEX TO MAP SHEETS
GRUNDY COUNTY, ILLINOIS

MILES 1 0 1 2 3

KILOMETERS 1 0 1 2 3 4 5 6

SCALE = 1:85000

SOIL LEGEND

Map unit symbols consist of a combination of numbers and letters. The initial numbers represent the kind of soil or miscellaneous area. An uppercase letter following these numbers indicates the class of slope. A final number of 2 following the slope class letter indicates that the soil is moderately eroded, and a final number of 3 indicates that the soil is severely eroded. Symbols that do not have a final number of 2 or 3 following a slope class letter indicate map units that are not eroded or are only slightly eroded. Symbols for miscellaneous areas do not have a slope class letter.

SYMBOL	NAME
23A	Blount silt loam, 0 to 2 percent slopes
23B	Blount silt loam, 2 to 4 percent slopes
42A	Papineau sandy loam, 0 to 2 percent slopes
49A	Watseka loamy fine sand, 0 to 2 percent slopes
69A	Milford silty clay loam, 0 to 2 percent slopes
88B	Sparta loamy fine sand, 1 to 6 percent slopes
91A	Swygert silty clay loam, 0 to 2 percent slopes
91B	Swygert silty clay loam, 2 to 4 percent slopes
91B2	Swygert silty clay loam, 2 to 4 percent slopes, eroded
91C2	Swygert silty clay loam, 4 to 6 percent slopes, eroded
93C2	Rodman gravelly loam, 4 to 6 percent slopes, eroded
98B	Ade loamy fine sand, 1 to 6 percent slopes
125A	Selma loam, 0 to 2 percent slopes
132A	Starks silt loam, 0 to 2 percent slopes
146A	Elliott silt loam, 0 to 2 percent slopes
146B	Elliott silt loam, 2 to 4 percent slopes
148A	Proctor silt loam, 0 to 2 percent slopes
148B	Proctor silt loam, 2 to 5 percent slopes
149A	Brenton silt loam, 0 to 2 percent slopes
151A	Ridgeville fine sandy loam, 0 to 2 percent slopes
152A	Drummer silty clay loam, 0 to 2 percent slopes
184A	Roby fine sandy loam, 0 to 2 percent slopes
189A	Martinton silt loam, 0 to 2 percent slopes
189B	Martinton silt loam, 2 to 4 percent slopes
201A	Gilford fine sandy loam, 0 to 2 percent slopes
223B	Varna silt loam, 2 to 4 percent slopes
223B2	Varna silt loam, 2 to 4 percent slopes, eroded
223C2	Varna silt loam, 4 to 6 percent slopes, eroded
223C3	Varna silty clay loam, 4 to 6 percent slopes, severely eroded
228A	Nappanee silt loam, 0 to 2 percent slopes
228B	Nappanee silt loam, 2 to 4 percent slopes
232A	Ashkum silty clay loam, 0 to 2 percent slopes
235A	Bryce silty clay, 0 to 2 percent slopes
241D3	Chatsworth silty clay, 6 to 12 percent slopes, severely eroded
241E3	Chatsworth silty clay, 12 to 20 percent slopes, severely eroded
241F	Chatsworth silty clay loam, 20 to 30 percent slopes
241G	Chatsworth silty clay loam, 30 to 50 percent slopes
290B	Warsaw loam, 2 to 4 percent slopes
290C2	Warsaw silt loam, 4 to 6 percent slopes, eroded
293A	Andres silt loam, 0 to 2 percent slopes
294A	Symerton silt loam, 0 to 2 percent slopes
294B	Symerton silt loam, 2 to 5 percent slopes
294C2	Symerton silt loam, 5 to 10 percent slopes, eroded
298A	Beecher silt loam, 0 to 2 percent slopes
298B	Beecher silt loam, 2 to 4 percent slopes
315A	Channahon silt loam, 0 to 2 percent slopes
315B	Channahon silt loam, 2 to 4 percent slopes
315C2	Channahon silt loam, 4 to 6 percent slopes, eroded
318B	Lorenzo loam, 2 to 4 percent slopes
329A	Will silty clay loam, 0 to 2 percent slopes
330A	Peotone silty clay loam, 0 to 2 percent slopes
343A	Kane silt loam, 0 to 2 percent slopes
354B	Hononegah loamy sand, 1 to 6 percent slopes
354D	Hononegah loamy sand, 6 to 12 percent slopes
356A	Elpaso silty clay loam, 0 to 2 percent slopes

SYMBOL	NAME
494B	Kankakee fine sandy loam, 2 to 4 percent slopes
503A	Rockton silt loam, 0 to 2 percent slopes
503B	Rockton silt loam, 2 to 4 percent slopes
513A	Granby fine sandy loam, 0 to 2 percent slopes
516A	Faxon silt loam, 0 to 2 percent slopes
530B	Ozaukee silt loam, 2 to 4 percent slopes
530C2	Ozaukee silt loam, 4 to 6 percent slopes, eroded
530C3	Ozaukee silty clay loam, 4 to 6 percent slopes, severely eroded
530D2	Ozaukee silt loam, 6 to 12 percent slopes, eroded
530D3	Ozaukee silty clay loam, 6 to 12 percent slopes, severely eroded
530E2	Ozaukee silt loam, 12 to 20 percent slopes, eroded
530F	Ozaukee silt loam, 20 to 30 percent slopes
536	Dumps
541B	Graymont silt loam, 2 to 5 percent slopes
541C2	Graymont silt loam, 5 to 10 percent slopes, eroded
553A	Bryce, shale substratum-Calamine silty clays, 0 to 2 percent slopes
555A	Shadeland silt loam, 0 to 2 percent slopes
556B	High Gap silt loam, 2 to 5 percent slopes
570B	Martinsville loam, 2 to 4 percent slopes
570C2	Martinsville loam, 4 to 6 percent slopes, eroded
570D2	Martinsville loam, 6 to 12 percent slopes, eroded
594A	Reddick clay loam, 0 to 2 percent slopes
614A	Chenoa silty clay loam, 0 to 2 percent slopes
672A	Cresent loam, 0 to 2 percent slopes
672B	Cresent loam, 2 to 5 percent slopes
688B	Braidwood loam, 1 to 7 percent slopes
688D	Braidwood loam, 7 to 20 percent slopes
688G	Braidwood loam, 20 to 70 percent slopes
740A	Darroch silt loam, 0 to 2 percent slopes
741B	Oakville fine sand, 1 to 6 percent slopes
741D	Oakville fine sand, 6 to 12 percent slopes
802B	Orthents, loamy, undulating
802D	Orthents, loamy, rolling
817A	Channahon-Hesch fine sandy loams, 0 to 2 percent slopes
817B	Channahon-Hesch fine sandy loams, 2 to 6 percent slopes
830	Landfills
863	Pits, clay
865	Pits, gravel
871D	Lenzburg silty clay loam, 7 to 20 percent slopes
871G	Lenzburg silty clay loam, 20 to 60 percent slopes
1107A	Sawmill silty clay loam, undrained, 0 to 2 percent slopes, frequently flooded
3073A	Ross loam, 0 to 2 percent slopes, frequently flooded
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded
3776A	Comfrey loam, 0 to 2 percent slopes, frequently flooded
4107A	Sawmill mucky silt loam, ponded, 0 to 2 percent slopes, frequently flooded
4516A	Faxon mucky silt loam, ponded, 0 to 2 percent slopes
4904A	Muskego and Peotone soils, ponded, 0 to 2 percent slopes
8073A	Ross loam, 0 to 2 percent slopes, occasionally flooded
8107A	Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded
8404A	Titus silty clay loam, 0 to 2 percent slopes, occasionally flooded
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded
8776A	Comfrey loam, 0 to 2 percent slopes, occasionally flooded
M-W	Miscellaneous water
W	Water

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

- National, state, or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park)
- Land grant
- Limit of soil survey (label) and/or denied access area
- Field sheet matchline & neatline
- Previously Published Survey

OTHER BOUNDARY (label)

- Airport, airfield
- Cemetery
- City/county park

STATE COORDINATE TICK
1 890 000 FEET

LAND DIVISION CORNER
(section and land grants)

GEOGRAPHIC COORDINATE TICK

TRANSPORTATION

- Divided roads
- Other roads
- Trail

ROAD EMBLEM & DESIGNATIONS

- Interstate — 173, 79 345
- Federal — 287, 410 224
- State — 52, 52 347
- County, farm or ranch — 1283

RAILROAD

POWER TRANSMISSION LINE

PIPELINE

FENCE

LEVEES

- Without road
- With road
- With railroad
- Single side slope (showing actual feature location)

DAMS

- Medium or Small — W

LANDFORM FEATURES

- Prominent hill or peak
- Soil Sample Site — S

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house (omit in urban areas)
- Church
- School
- Other Religion (label) — Mt Carmel
- Located object (label) — Ranger Station
- Tank (label) — Petroleum
- Lookout Tower
- Oil and/or Natural Gas Wells
- Windmill
- Lighthouse

HYDROGRAPHIC FEATURES

STREAMS

- Perennial, double line
- Perennial, single line — Label only
- Intermittent — Label only
- Drainage end — Label only

DRAINAGE AND IRRIGATION

- Double-line canal (label) — CANAL
- Perennial drainage and/or irrigation ditch — Label only
- Intermittent drainage and/ or irrigation ditch — Label only

SMALL LAKES, PONDS AND RESERVOIRS

- Perennial water
- Miscellaneous water
- Flood pool line — FLOOD POOL LINE

MISCELLANEOUS WATER FEATURES

- Spring
- Well, artesian
- Well, irrigation

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS — 23A 555A

LANDFORM FEATURES

ESCARPMENTS

- Bedrock
- Other than bedrock
- Short steep slope
- Gully
- Depression, closed
- Sinkhole

EXCAVATIONS

PITS

- Borrow pits
- Gravel pit
- Mine or quarry
- Landfill

MISCELLANEOUS SURFACE FEATURES

- Blowout
- Clay spot
- Gravelly spot
- Lava flow
- Marsh or swamp
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip
- Sodic spot
- Spoil area
- Stony spot
- Very stony spot
- Wet spot

AD HOC FEATURES

- Calcareous spot
- Muck spot

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

2 STAVANGER NE
7 STAVANGER SW
8 STAVANGER SE
INDEX TO ADJOINING 3.75 MAPS

STAVANGER NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 1 OF 46

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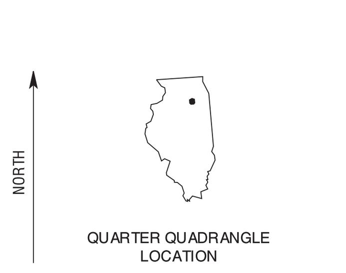

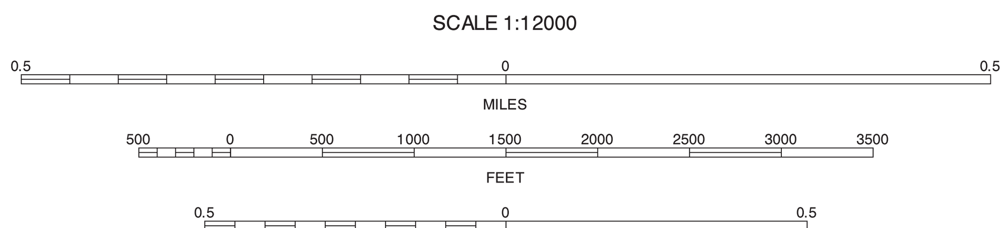

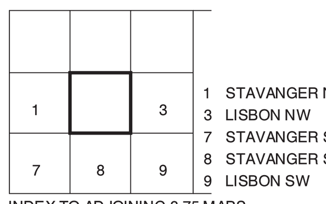

STAVANGER NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 2 OF 46

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

2 STAVANGER NE
4 LISBON NE
8 STAVANGER SE
9 LISBON SW
10 LISBON SE

INDEX TO ADJOINING 3.75 MAPS

LISBON NW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 3 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
LISBON NE QUADRANGLE
SHEET NUMBER 4 OF 46

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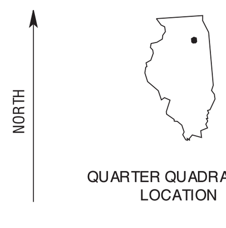
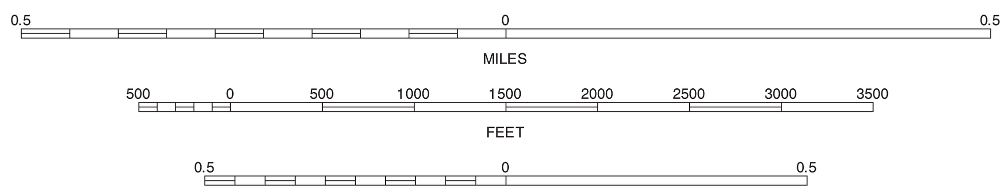
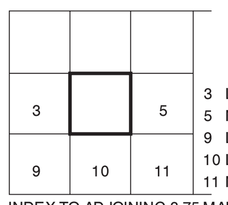


QUARTER QUADRANGLE LOCATION

SCALE 1:12000





3 LISBON NW
5 MINOOKA NW
9 LISBON SW
10 LISBON SE
11 MINOOKA SW

INDEX TO ADJOINING 3.75 MAPS

LISBON NE, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 4 OF 46

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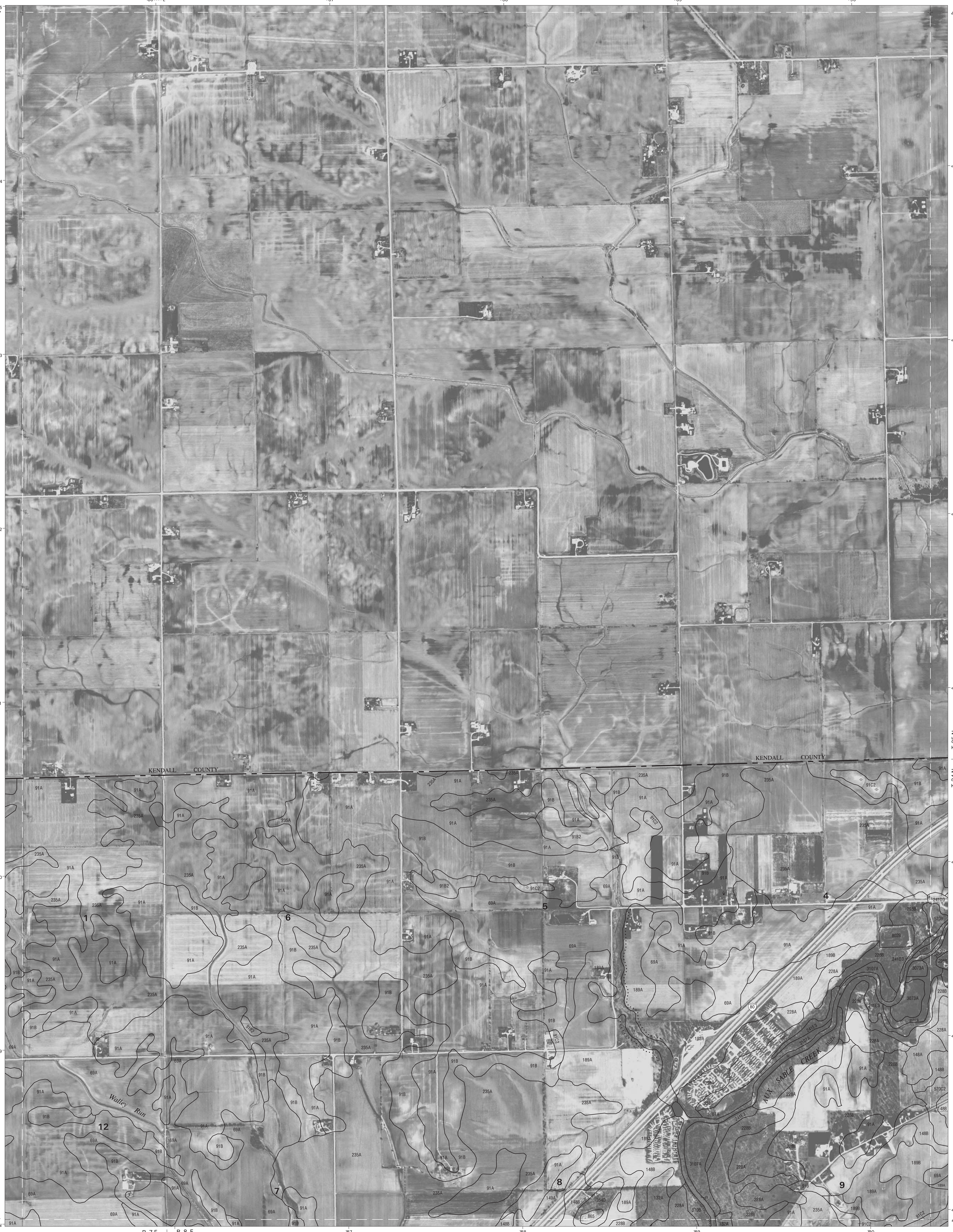

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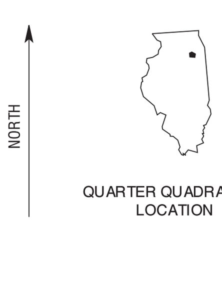

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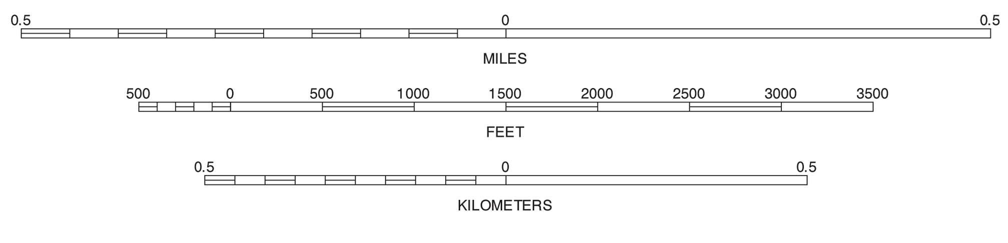

4		6
10	11	12

4 LISBON NE
6 MINOOKA NE
10 LISBON SE
11 MINOOKA SW
12 MINOOKA SE

INDEX TO ADJOINING 3.75 MAPS

MINOOKA NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 5 OF 46

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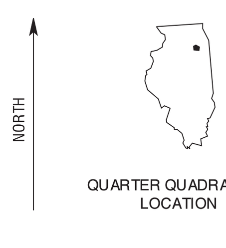
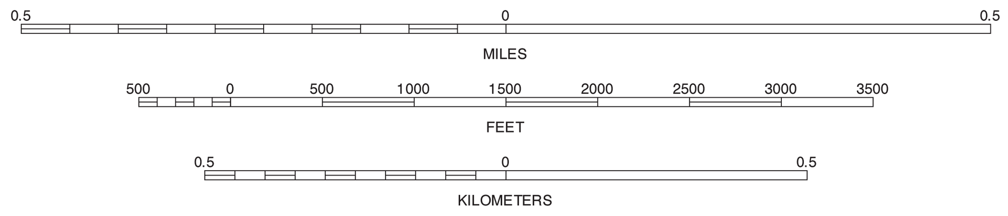
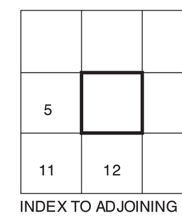


QUARTER QUADRANGLE LOCATION

SCALE 1:12000





5 MINOOKA NW
11 MINOOKA SW
12 MINOOKA SE

INDEX TO ADJOINING 3.75 MAPS

MINOOKA NE, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 6 OF 46

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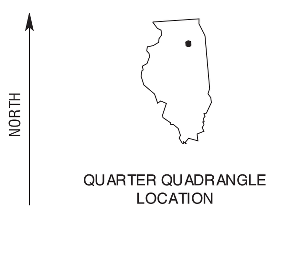

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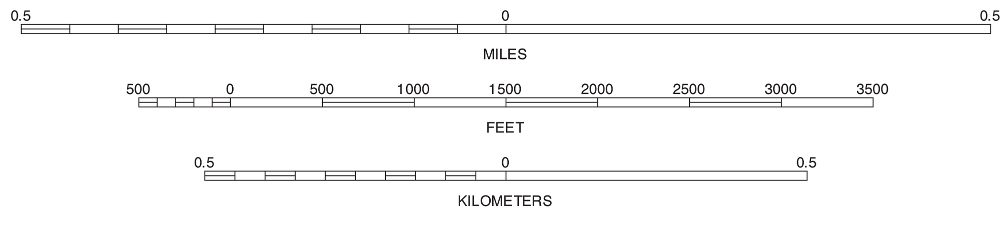

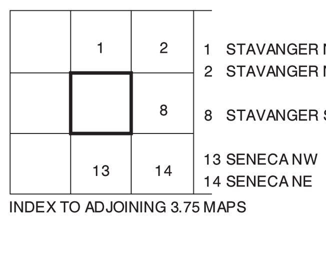

STAVANGER SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 7 OF 46

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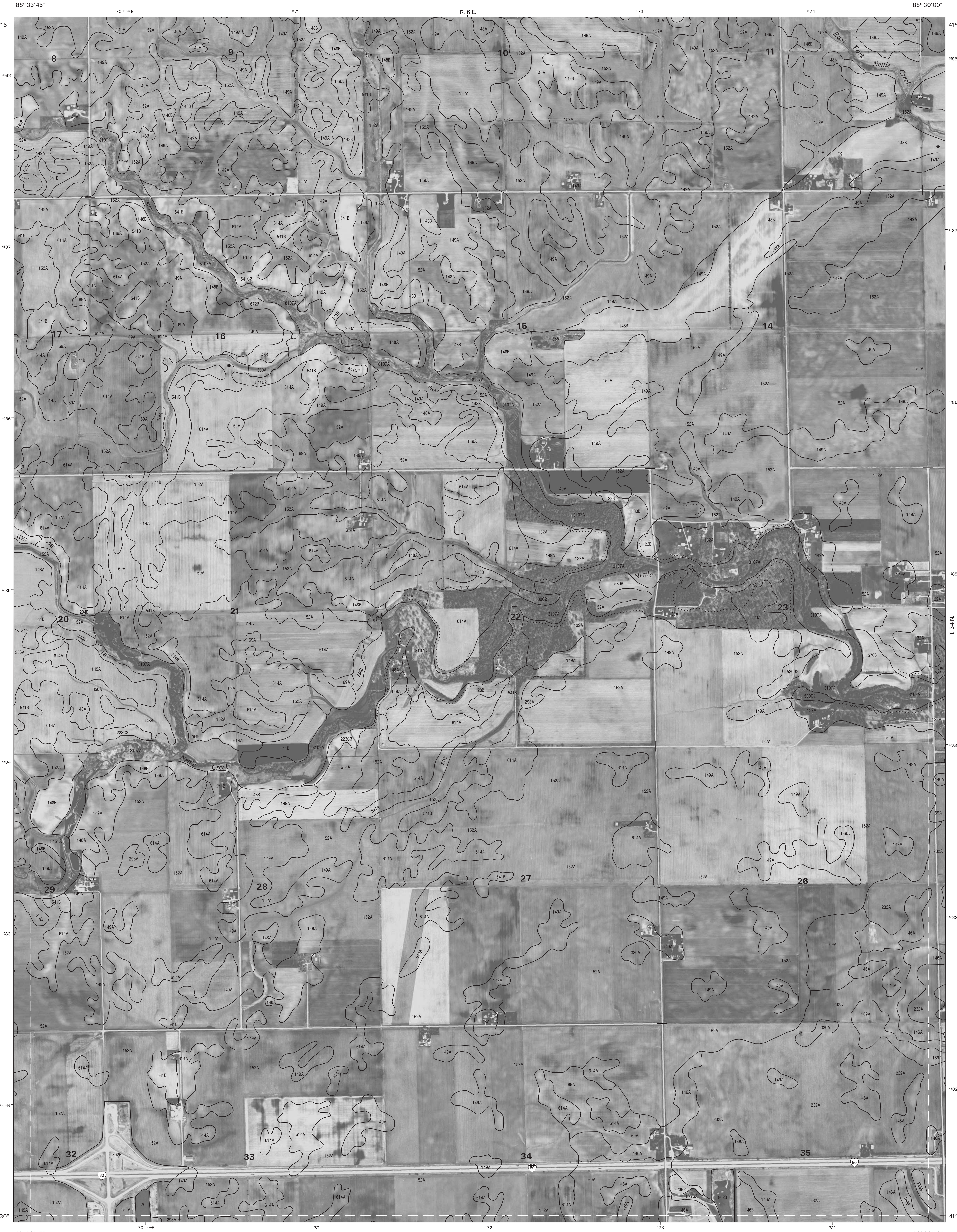
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
STAVANGER SE QUADRANGLE
SHEET NUMBER 8 OF 46



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	3
7		9
13	14	15

1 STAVANGER NW
2 STAVANGER NE
3 LISBON NW
7 STAVANGER SW
9 LISBON SW
13 SENECA NW
14 SENECA NE
15 MORRIS NW

INDEX TO ADJOINING 3.75 MAPS

STAVANGER SE, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 8 OF 46

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
LISBON SW QUADRANGLE
SHEET NUMBER 9 OF 46

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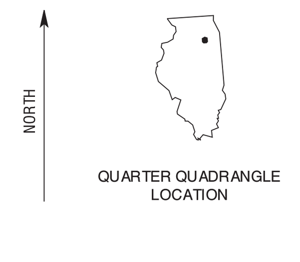
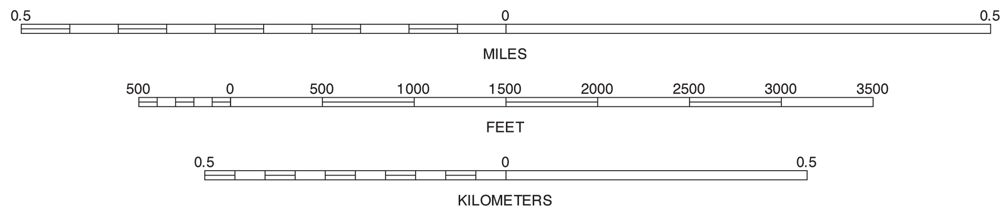
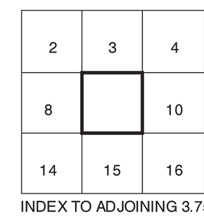


QUARTER QUADRANGLE LOCATION

SCALE 1:12000





2 STAVANGER NE
3 LISBON NW
4 LISBON NE
8 STAVANGER SE
10 LISBON SE
14 SENECA NE
15 MORRIS NW
16 MORRIS NE

INDEX TO ADJOINING 3.75 MAPS

LISBON SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 9 OF 46

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UNITED STATES
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NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
LISBON SE QUADRANGLE
SHEET NUMBER 10 OF 46

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division corners, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

3	4	5
9		11
15	16	17

3 LISBON NW
4 LISBON NE
5 MINOOKA NW
9 LISBON SW
11 MINOOKA SW
15 MORRIS NW
16 MORRIS NE
17 COAL CITY NW

INDEX TO ADJOINING 3.75 MAPS

LISBON SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 10 OF 46

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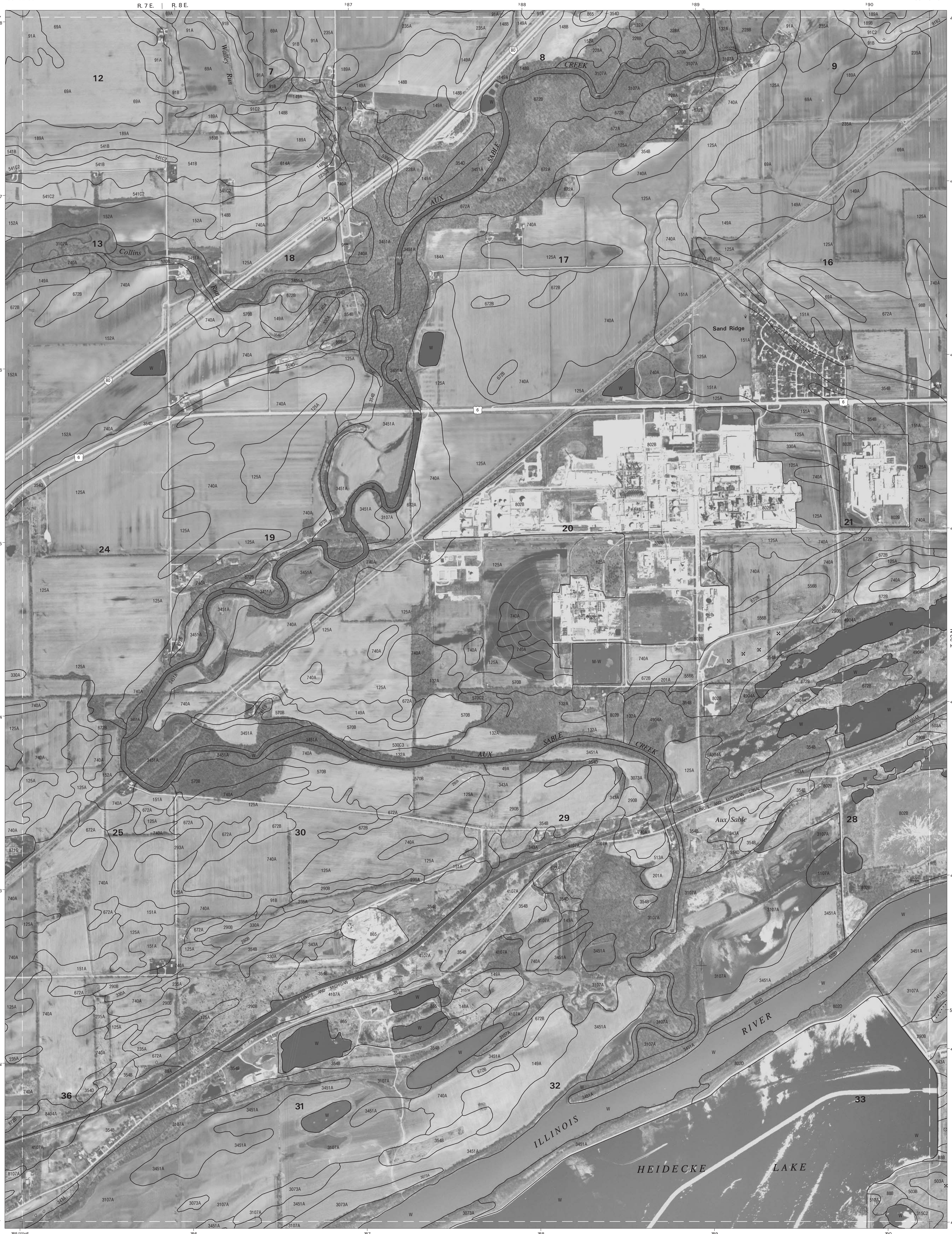

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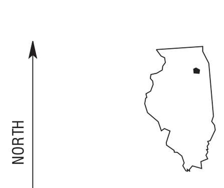

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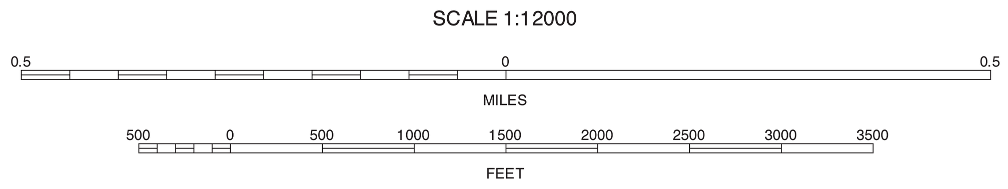

4	5	6
10		12
16	17	18

4 LISBON NE
5 MINOOKA NW
6 MINOOKA NE
10 LISBON SE
12 MINOOKA SE
16 MORRIS NE
17 COAL CITY NW
18 COAL CITY NE

INDEX TO ADJOINING 3.75 MAPS

MINOOKA SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 11 OF 46

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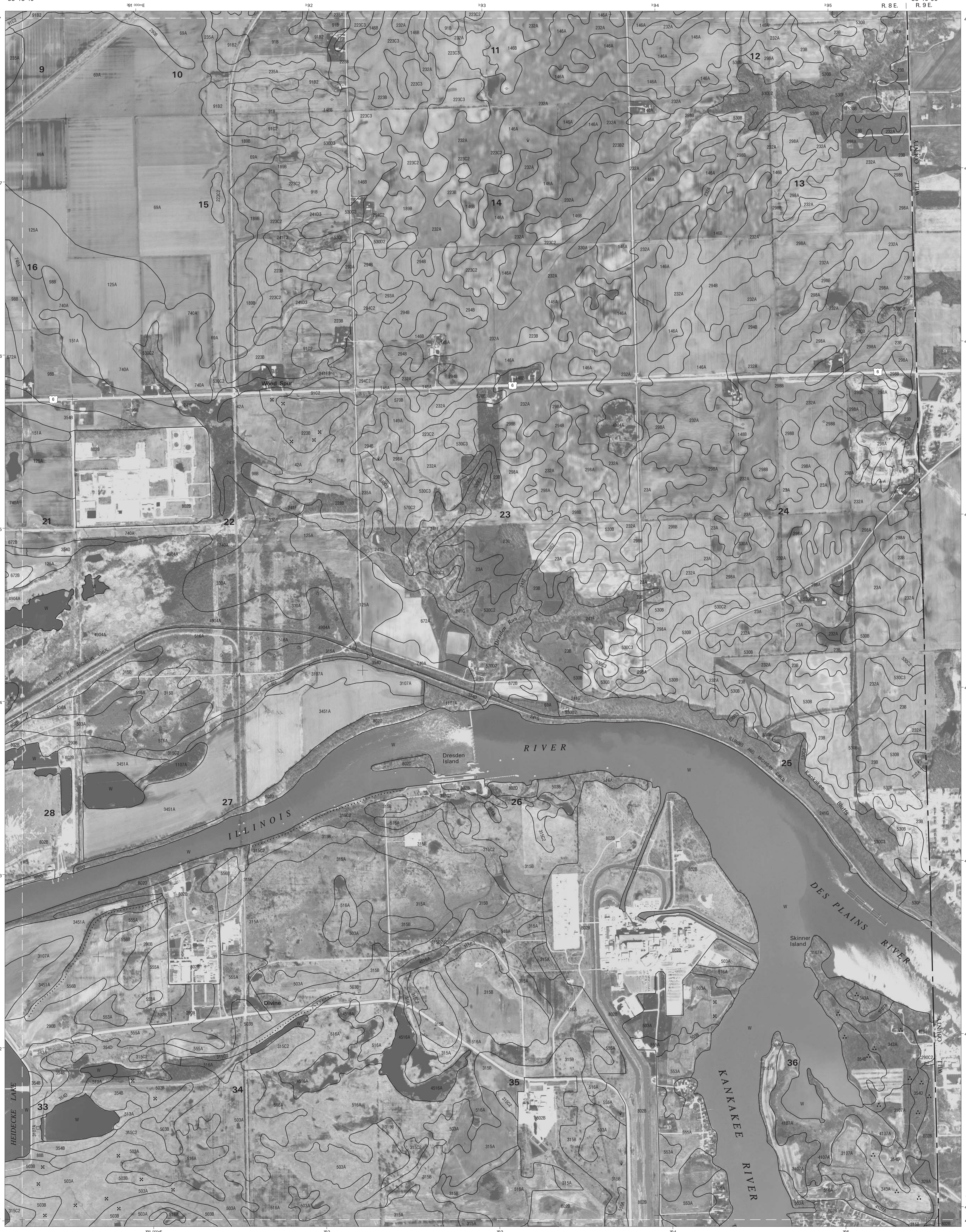
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
MINOOKA SE QUADRANGLE (OVERSIZED)
SHEET NUMBER 12 OF 46



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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

5 MINOOKA NW
6 MINOOKA NE
11 MINOOKA SW
17 COAL CITY NW
18 COAL CITY NE

INDEX TO ADJOINING 3.75 MAPS

MINOOKA SE, (OVERSIZED) ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 12 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

88° 37′30″ — 88° 33′45″
41° 22′30″ — 41° 18′45″

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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES (0.5 — 0 — 0.5)

FEET (500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500)

KILOMETERS (0.5 — 0 — 0.5)

INDEX TO ADJOINING 3.75 MAPS

7 STAVANGER SW
8 STAVANGER SE
14 SENECA NE
19 SENECA SW
20 SENECA SE

SENECA NW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 13 OF 46

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

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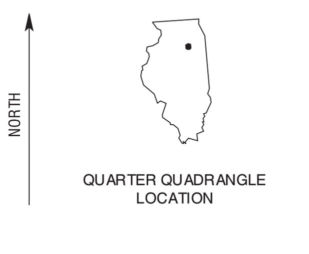

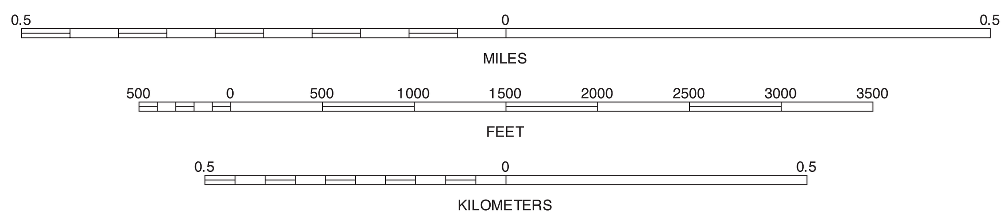

7	8	9
13		15
19	20	21

7 STAVANGER SW
8 STAVANGER SE
9 LISBON SW
13 SENECA NW
15 MORRIS NW
19 SENECA SW
20 SENECA SE
21 MORRIS SW

INDEX TO ADJOINING 3.75 MAPS

SENECA NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 14 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
MORRIS NW QUADRANGLE
SHEET NUMBER 15 OF 46

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

8	9	10
14		16
20	21	22

8 STAVANGER SE
9 LISBON SW
10 LISBON SE
14 SENECA NE
16 MORRIS NE
20 SENECA SE
21 MORRIS SW
22 MORRIS SE

INDEX TO ADJOINING 3.75 MAPS

MORRIS NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 15 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
MORRIS NE QUADRANGLE
SHEET NUMBER 16 OF 46

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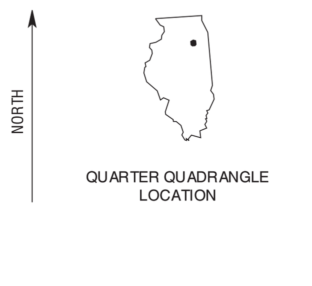
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

9	10	11
15		17
21	22	23

9 LISBON SW
10 LISBON SE
11 MINOOKA SW
15 MORRIS NW
17 COAL CITY NW
21 MORRIS SW
22 MORRIS SE
23 COAL CITY SW

INDEX TO ADJOINING 3.75 MAPS

MORRIS NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 16 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

88° 22′30″ — 88°18′45″
41° 22′30″ — 41°18′45″

R. 7 E. | R. 8 E.

T. 34 N.
T. 33 N.

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

10	11	12
16		18
22	23	24

10 LISBON SE
11 MINOOKA SW
12 MINOOKA SE
16 MORRIS NE
18 COAL CITY NE
22 MORRIS SE
23 COAL CITY SW
24 COAL CITY SE

INDEX TO ADJOINING 3.75 MAPS

COAL CITY NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 17 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
COAL CITY NE QUADRANGLE (OVERSIZED)
SHEET NUMBER 18 OF 46

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.Base maps are orthophotographs prepared by the U.S.Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

11	12	
17		
23	24	25

11 MINOOKA SW
12 MINOOKA SE
17 COAL CITY NW
23 COAL CITY SW
24 COAL CITY SE
25 WILMINGTON SW

INDEX TO ADJOINING 3.75 MAPS

COAL CITY NE, (OVERSIZED) ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 18 OF 46

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

13	14	13 SENECA NW, 14 SENECA NE
	20	20 SENECA SE
26	27	26 KINSMAN NW, 27 KINSMAN NE

INDEX TO ADJOINING 3.75 MAPS

SENECA SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 19 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
SENECA SE QUADRANGLE
SHEET NUMBER 20 OF 46

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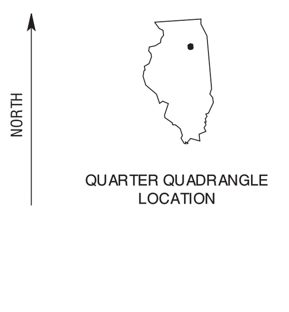
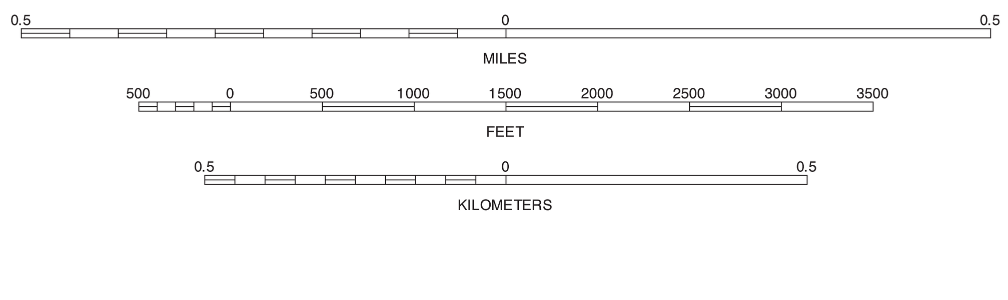
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



13	14	15
19		21
26	27	28

13 SENECA NW
14 SENECA NE
15 MORRIS NW
19 SENECA SW
21 MORRIS SW
26 KINSMAN NW
27 KINSMAN NE
28 MAZON NW

INDEX TO ADJOINING 3.75 MAPS

SENECA SE, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 20 OF 46

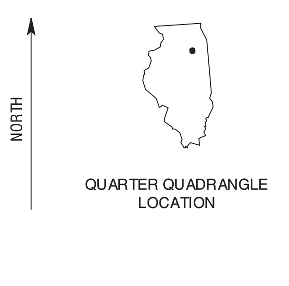
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
MORRIS SW QUADRANGLE
SHEET NUMBER 21 OF 46

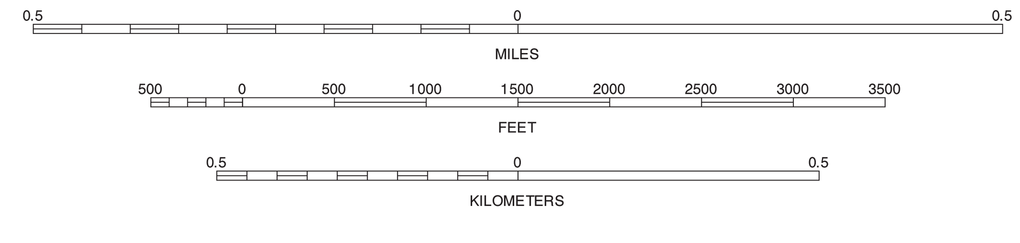
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



14	15	16
20		22
27	28	29

14 SENECA NE
15 MORRIS NW
16 MORRIS NE
20 SENECA SE
22 MORRIS SE
27 KINSMAN NE
28 MAZON NW
29 MAZON NE

INDEX TO ADJOINING 3.75 MAPS

MORRIS SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 21 OF 46

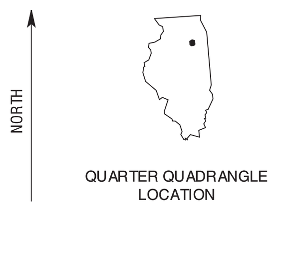
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

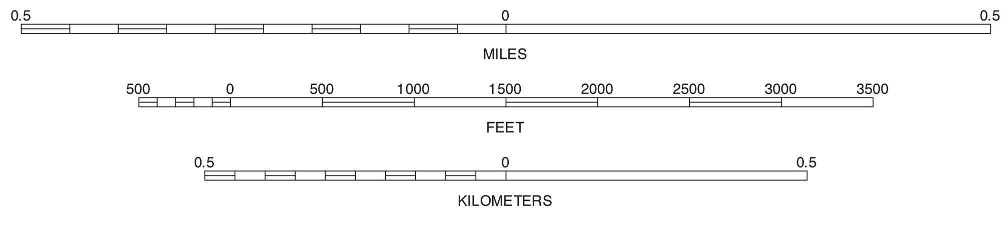
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

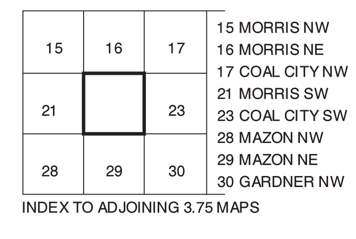
GRUNDY COUNTY, ILLINOIS
MORRIS SE QUADRANGLE
SHEET NUMBER 22 OF 46

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.







MORRIS SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 22 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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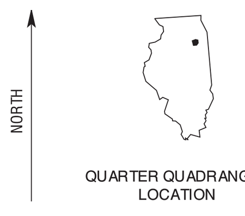
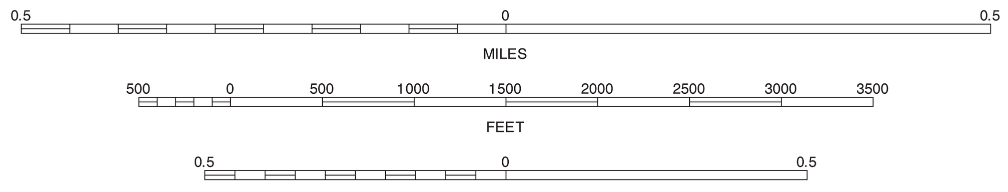
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



16	17	18
22		24
29	30	31

16 MORRIS NE
17 COAL CITY NW
18 COAL CITY NE
22 MORRIS SE
24 COAL CITY SE
29 MAZON NE
30 GARDNER NW
31 GARDNER NE

INDEX TO ADJOINING 3.75 MAPS

COAL CITY SW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 23 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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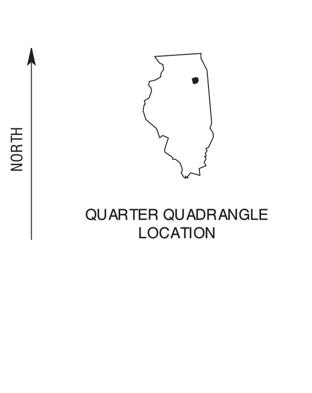

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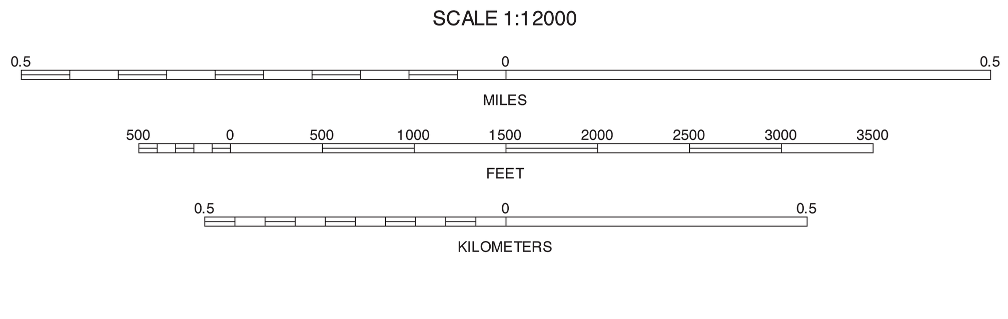

17	18	
23		25
30	31	32

17 COAL CITY NW
18 COAL CITY NE
23 COAL CITY SW
25 WILMINGTON SW
30 GARDNER NW
31 GARDNER NE
32 ESSEX NW

INDEX TO ADJOINING 3.75 MAPS

COAL CITY SE, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 24 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
WILMINGTON SW QUADRANGLE
SHEET NUMBER 25 OF 46

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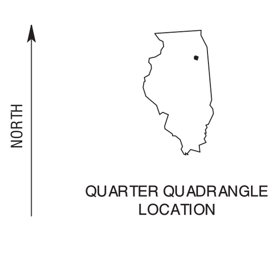
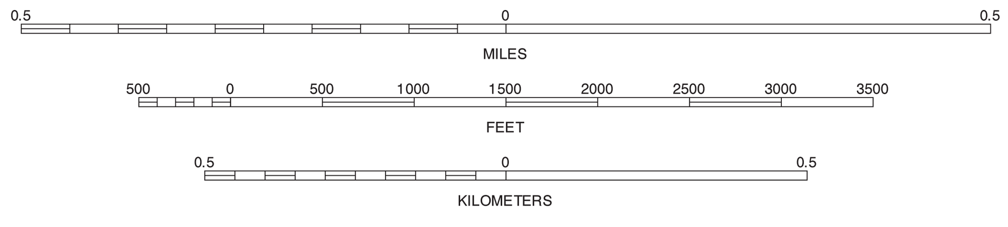
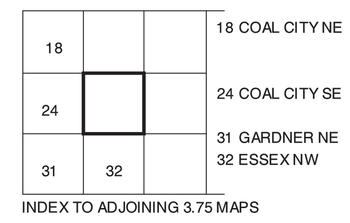
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000





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WILMINGTON SW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 25 OF 46

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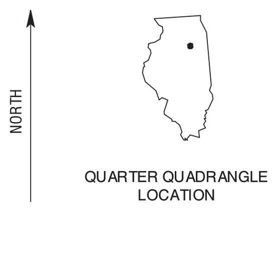
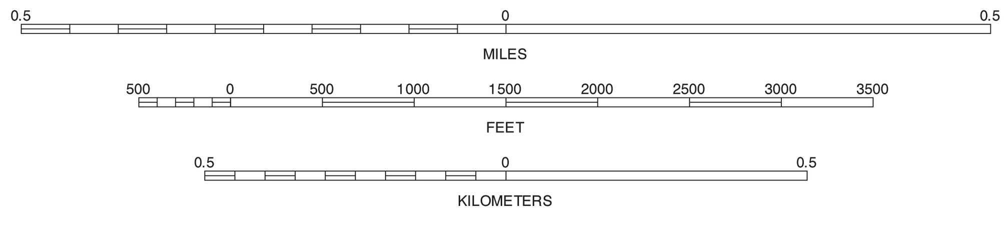
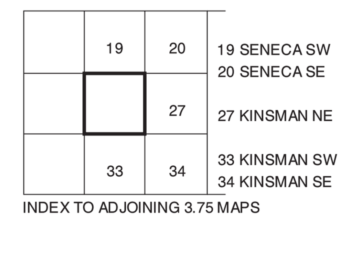
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000





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KINSMAN NW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 26 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
KINSMAN NE QUADRANGLE
SHEET NUMBER 27 OF 46

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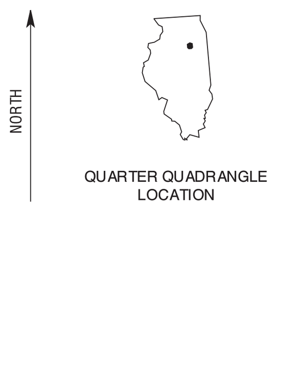
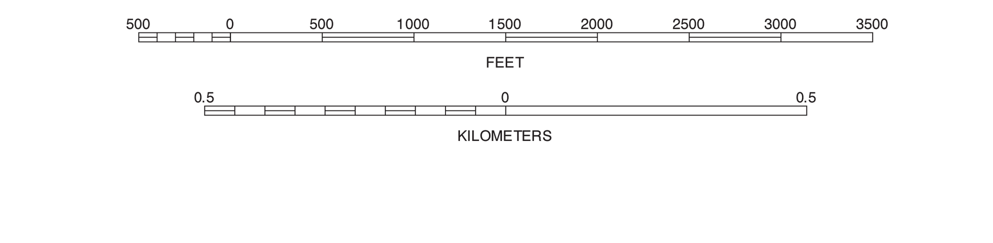
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



SCALE 1:12000



19	20	21
26		28
33	34	35

19 SENECA SW
20 SENECA SE
21 MORRIS SW
26 KINSMAN NW
28 MAZON NW
33 KINSMAN SW
34 KINSMAN SE
35 MAZON SW

INDEX TO ADJOINING 3.75 MAPS

KINSMAN NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 27 OF 46

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

20	21	22
27		29
34	35	36

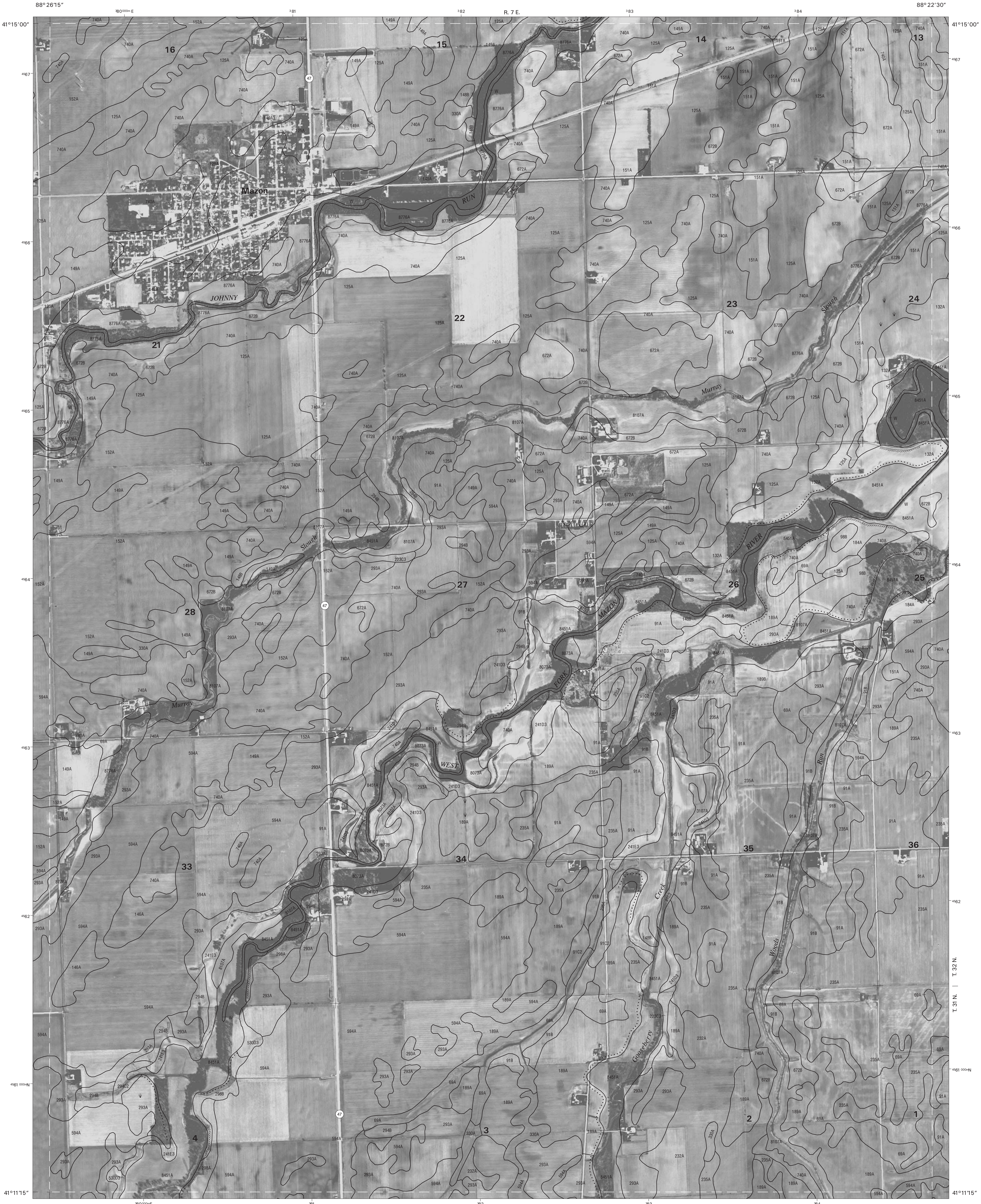
20 SENECA SE
21 MORRIS SW
22 MORRIS SE
27 KINSMAN NE
29 MAZON NE
34 KINSMAN SE
35 MAZON SW
36 MAZON SE

INDEX TO ADJOINING 3.75 MAPS

MAZON NW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 28 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

21	22	23
28		30
35	36	37

21 MORRIS SW
22 MORRIS SE
23 COAL CITY SW
28 MAZON NW
30 GARDNER NW
35 MAZON SW
36 MAZON SE
37 GARDNER SW

INDEX TO ADJOINING 3.75 MAPS

MAZON NE, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 29 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

22	23	24
29		31
36	37	38

22 MORRIS SE
23 COAL CITY SW
24 COAL CITY SE
29 MAZON NE
31 GARDNER NE
36 MAZON SE
37 GARDNER SW
38 GARDNER SE

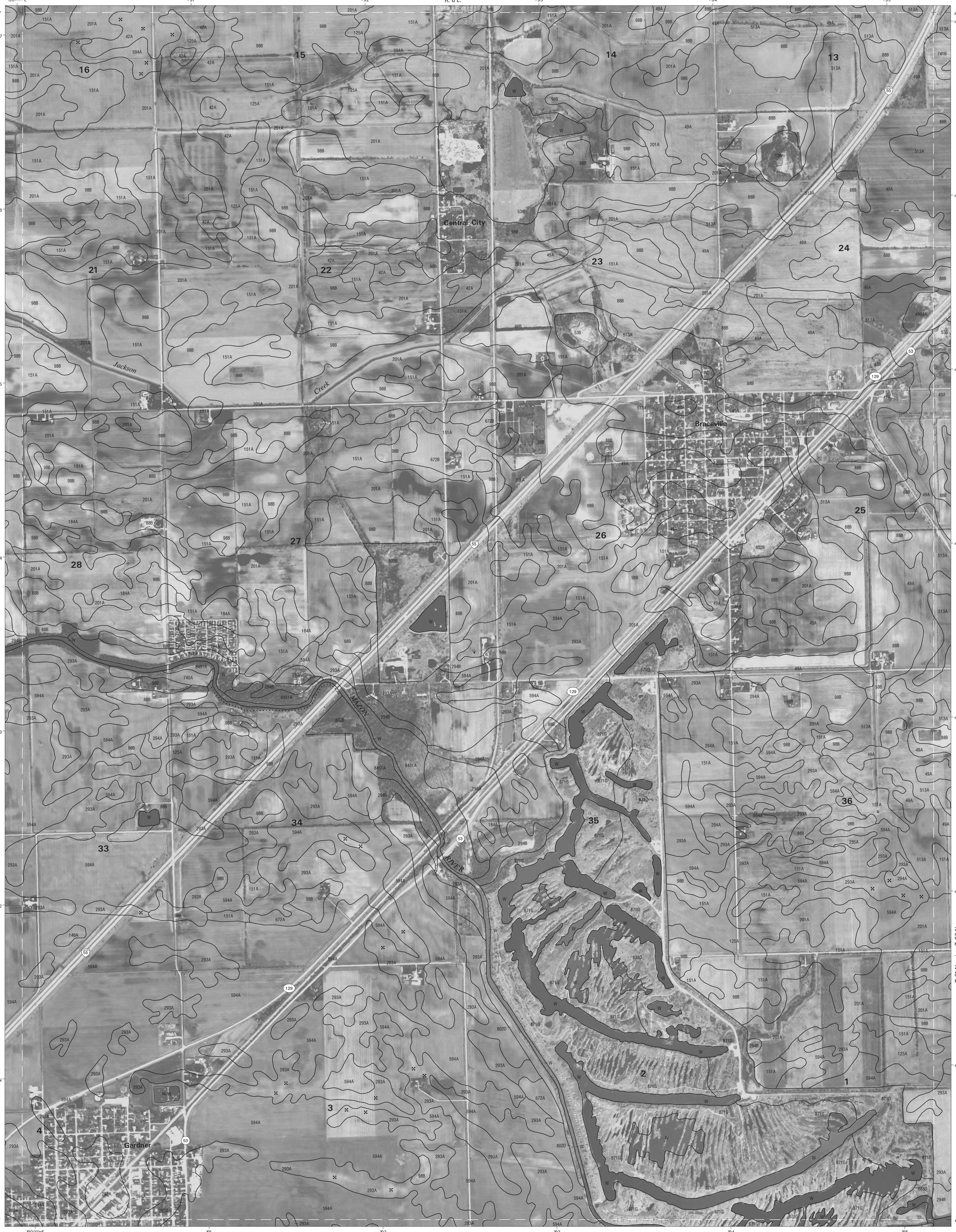
INDEX TO ADJOINING 3.75 MAPS

GARDNER NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 30 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

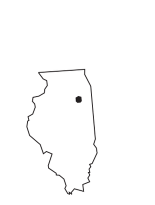
GRUNDY COUNTY, ILLINOIS
GARDNER NE QUADRANGLE
SHEET NUMBER 31 OF 46



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.Base maps are orthophotographs prepared by the U.S.Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

23	24	25
30		32
37	38	39

23 COAL CITY SW
24 COAL CITY SE
25 WILMINGTON SW
30 GARDNER NW
32 ESSEX NW
37 GARDNER SW
38 GARDNER SE
39 ESSEX SW

INDEX TO ADJOINING 3.75 MAPS

GARDNER NE, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 31 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
ESSEX NW QUADRANGLE
SHEET NUMBER 32 OF 46

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.Base maps are orthophotographs prepared by the U.S.Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

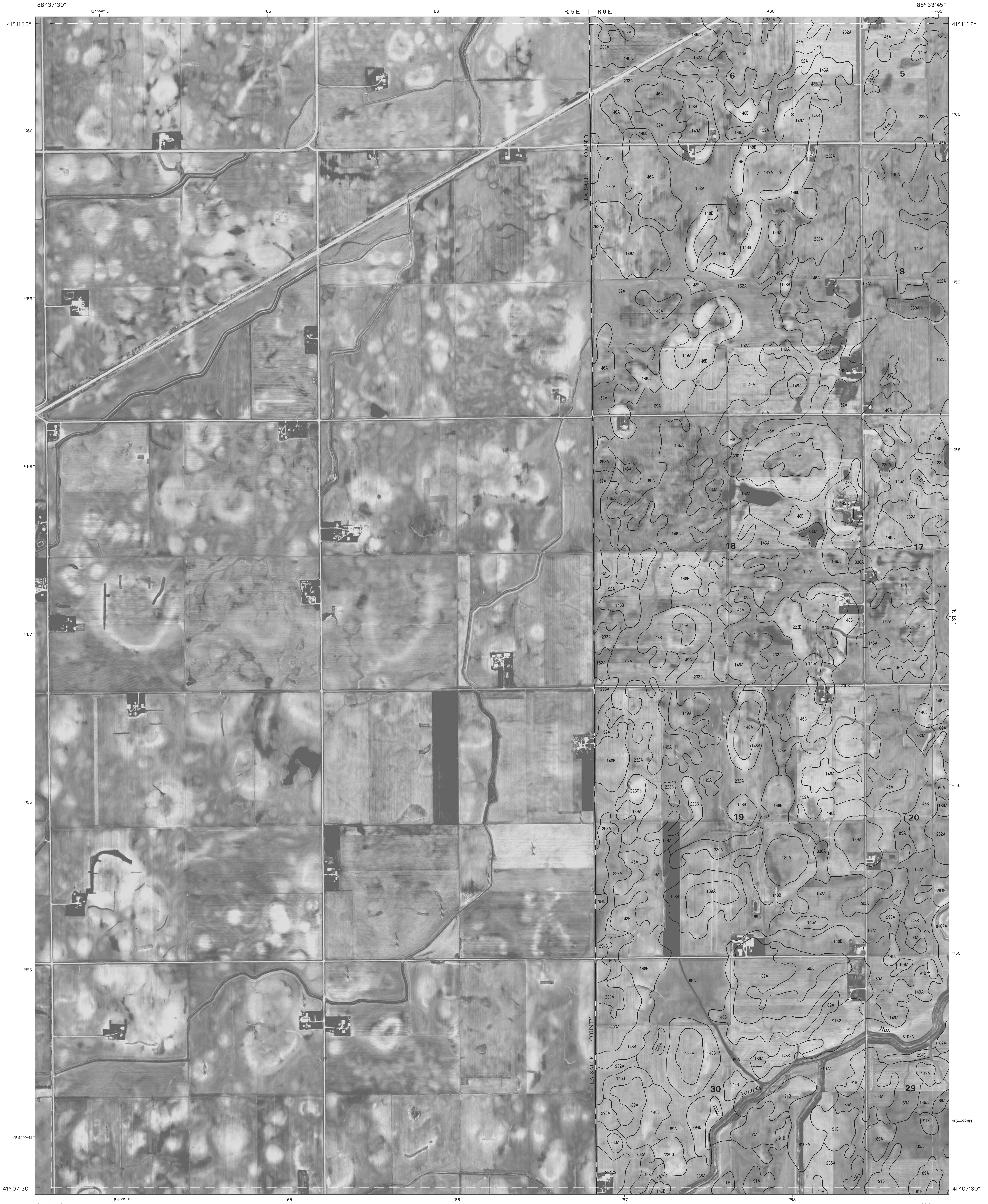
24	25	
31		
38	39	

24 COAL CITY SE
25 WILMINGTON SW
31 GARDNER NE
38 GARDNER SE
39 ESSEX SW

INDEX TO ADJOINING 3.75 MAPS

ESSEX NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 32 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



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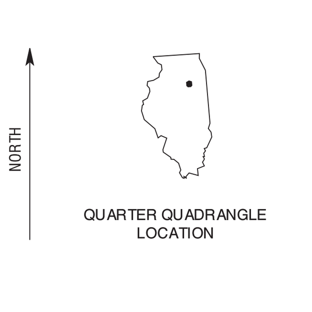
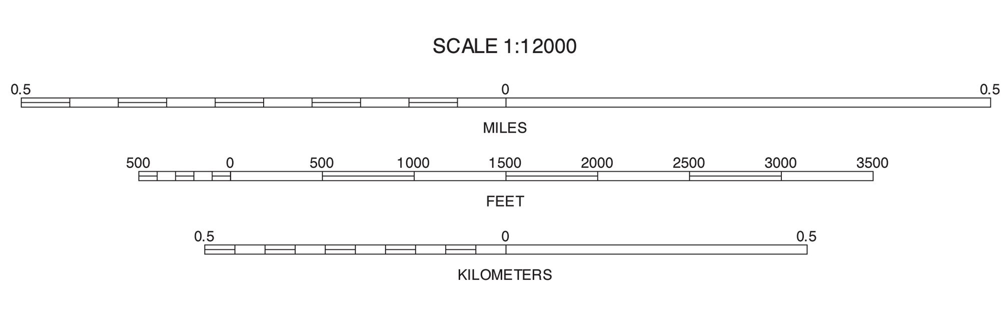
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.





	26	27
		34
	40	41

26 KINSMAN NW
27 KINSMAN NE
34 KINSMAN SE
40 ODELL NW
41 ODELL NE

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KINSMAN SW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 33 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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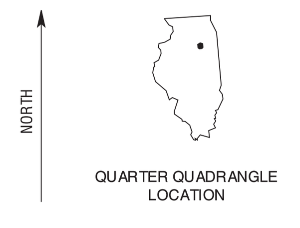
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



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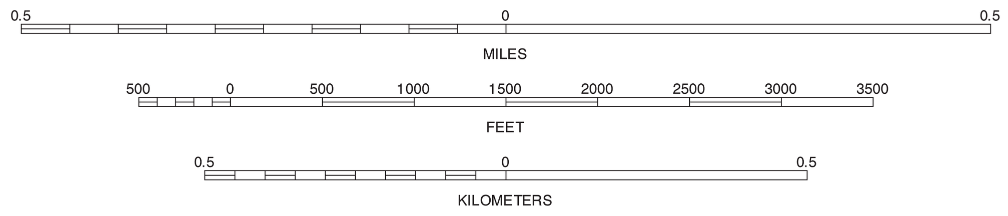

26	27	28
33		35
40	41	42

26 KINSMAN NW
27 KINSMAN NE
28 MAZON NW
33 KINSMAN SW
35 MAZON SW
40 ODELL NW
41 ODELL NE
42 DWIGHT NW

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KINSMAN SE, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 34 OF 46

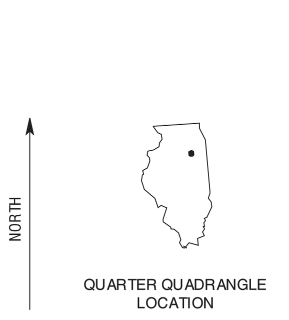
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
MAZON SW QUADRANGLE
SHEET NUMBER 35 OF 46

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

27	28	29	27 KINSMAN NE 28 MAZON NW 29 MAZON NE
34		36	34 KINSMAN SE 36 MAZON SE
41	42	43	41 ODELL NE 42 DWIGHT NW 43 DWIGHT NE

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MAZON SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 35 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
MAZON SE QUADRANGLE
SHEET NUMBER 36 OF 46

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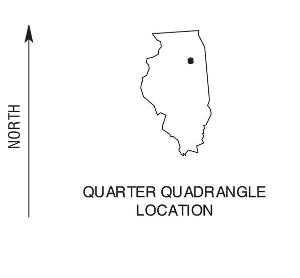
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

28	29	30
35		37
42	43	44

28 MAZON NW
29 MAZON NE
30 GARDNER NW
35 MAZON SW
37 GARDNER SW
42 DWIGHT NW
43 DWIGHT NE
44 CAMPUS NW

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MAZON SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 36 OF 46

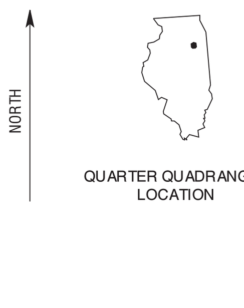
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
GARDNER SW QUADRANGLE
SHEET NUMBER 37 OF 46

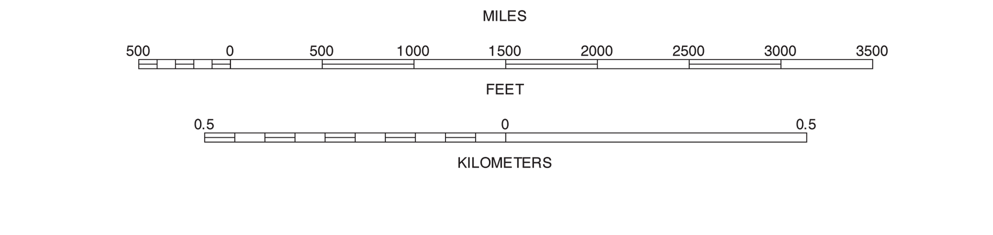
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



29	30	31
36		38
43	44	45

29 MAZON NE
30 GARDNER NW
31 GARDNER NE
36 MAZON SE
38 GARDNER SE
43 DWIGHT NE
44 CAMPUS NW
45 CAMPUS NE

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GARDNER SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 37 OF 46

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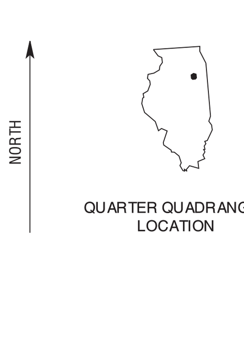
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



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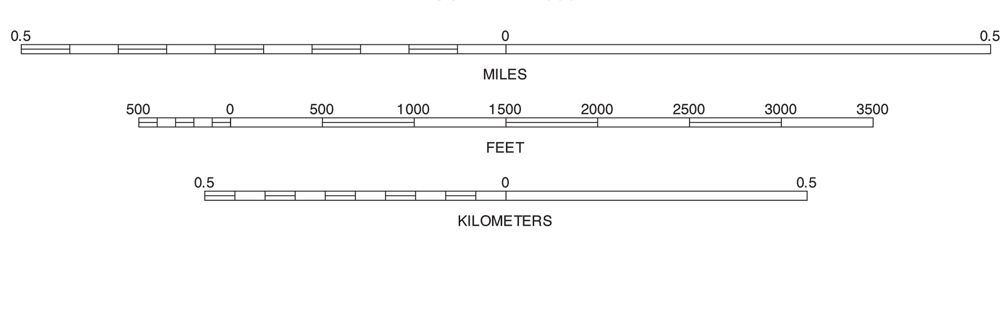

30	31	32
37		39
44	45	46

30 GARDNER NW
31 GARDNER NE
32 ESSEX NW
37 GARDNER SW
39 ESSEX SW
44 CAMPUS NW
45 CAMPUS NE
46 BUCKINGHAM NW

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GARDNER SE, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 38 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
ESSEX SW QUADRANGLE
SHEET NUMBER 39 OF 46

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.Base maps are orthophotographs prepared by the U.S.Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5

31	32	
38		
45	46	

31 GARDNER NE
32 ESSEX NW
38 GARDNER SE
45 CAMPUS NE
46 BUCKINGHAM NW

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ESSEX SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 39 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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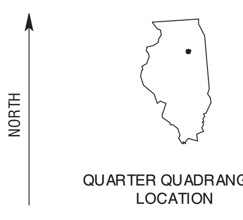
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



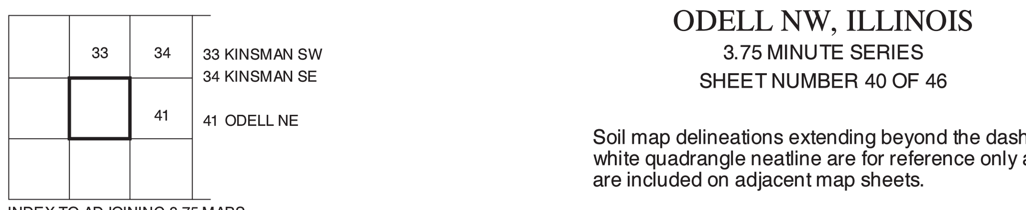
QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 — 0 — 0.5

FEET: 500 — 0 — 500 — 1000 — 1500 — 2000 — 2500 — 3000 — 3500

KILOMETERS: 0.5 — 0 — 0.5



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ODELL NW, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 40 OF 46

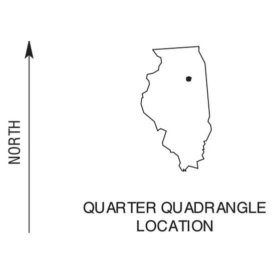
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
ODELL NE QUADRANGLE
SHEET NUMBER 41 OF 46

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.Base maps are orthophotographs prepared by the U.S.Department of Interior, Geological Survey, from 1998-1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



SCALE 1:12000

MILES: 0.5 0 0.5

FEET: 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS: 0.5 0 0.5

33	34	35
40		42

33 KINSMAN SW
34 KINSMAN SE
35 MAZON SW
40 ODELL NW
42 DWIGHT NW

INDEX TO ADJOINING 3.75 MAPS

ODELL NE, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 41 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

GRUNDY COUNTY, ILLINOIS
DWIGHT NW QUADRANGLE
SHEET NUMBER 42 OF 46

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

34	35	36
41		43

34 KINSMAN SE
35 MAZON SW
36 MAZON SE
41 ODELL NE
43 DWIGHT NE

INDEX TO ADJOINING 3.75 MAPS

DWIGHT NW, ILLINOIS
3.75 MINUTE SERIES
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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

35	36	37
42		44

35 MAZON SW
36 MAZON SE
37 GARDNER SW
42 DWIGHT NW
44 CAMPUS NW

INDEX TO ADJOINING 3.75 MAPS

DWIGHT NE, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 43 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

36	37	38
43		45

36 MAZON SE
37 GARDNER SW
38 GARDNER SE
43 DWIGHT NE
45 CAMPUS NE

INDEX TO ADJOINING 3.75 MAPS

CAMPUS NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 44 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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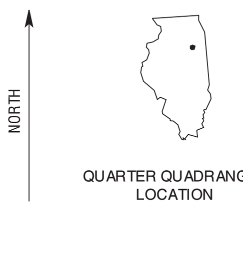
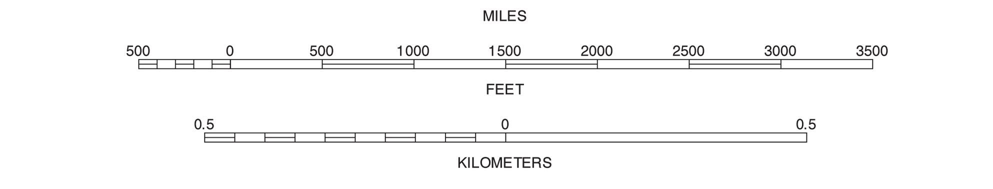
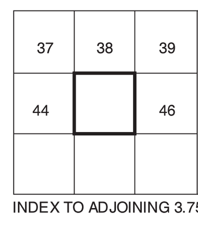
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000





37 GARDNER SW
38 GARDNER SE
39 ESSEX SW
44 CAMPUS NW
46 BUCKINGHAM NW

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CAMPUS NE, ILLINOIS

3.75 MINUTE SERIES
SHEET NUMBER 45 OF 46

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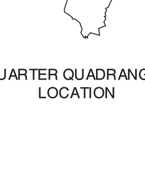
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

38	39	
45	■	

38 GARDNER SE
39 ESSEX SW
45 CAMPUS NE

INDEX TO ADJOINING 3.75 MAPS

BUCKINGHAM NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 46 OF 46

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.